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ROYAL COLLEGE OF

DENTAL SURGEONS OF ONTARIO.

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THE

ODONTOGRAPHIC JOURNAL

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WHY NOT PAY FOR IT?

Recent issues of *The Lancet* contain several letters from gentlemen holding respectively the M.D., F.R.C.S., and L.D.S., degrees, in which are expressed their views upon the question of professional courtesy between medical men and dentists. The whole makes interesting, not to say amusing, reading, and at the same time furnishes food for thoughtful consideration. One correspondent, who signs himself M.D., M.R.C.S., writes to *The Lancet* as follows:

"I think that the rule as to fees between medical men and dentists is a very one-sided one,—that is to say, practitioners apparently rarely charge dentists for services rendered, whilst dentists almost invariably charge practitioners. I have never taken a fee from a dentist, and yet I have always been charged by dentists, even when the latter were personal friends. Dentists appear to charge medical men half fees,—that is to say, half a guinea for stopping a tooth, etc. I enclose the names of dentists whom I have consulted. You will see that all are qualified men. Personally, for obvious reasons, I prefer to pay a fee. I am, sirs, yours faithfully, etc."

This brought out in the succeeding issue a communication from another medical man with a grievance, in which he says,—

"It is high time that some one called attention to our relations with dentists. . . . I think our liberality towards them is entirely misplaced courtesy. I once had a curious and appropriate experience in this connection. I was once having my teeth stopped by a West End L.D.S. During one of my visits he recounted to me the great courtesy and liberality shown to him by one in the foremost ranks of our profession,—a baronet. This latter had during an illness given him gratuitous attendance. The L.D.S. gentleman *charged me half a guinea a tooth for stopping.* Dentistry is for the most part a mechanical craft, that should be carried out, when necessary, under the supervision of a medical man ; and I am of the opinion that until dentists give up advertising and shop-window shows, no medical man should be allowed to practice as a dentist, nor should any dentist be recognized as a medical man."

Mr. Henry Sewill makes a dignified response to this latter communication, defending the professional spirit of qualified dentists as a body, and states that "it is certainly not the rule for dentists to accept fees from medical men for professional services." The Gordian knot is editorially cut by the suggestion that dentists should charge only for the gold used in stopping the teeth of medical men. This smallest tempest in a teapot, it strikes us, is one of those outgrowths of an ancient custom which it would be well to dispense with and then readjust the matter in accordance with modern conditions. Is there any good reason why a medical man should not pay for his dental services, or is there any reason why the dentist should not pay for his medical attention? In times long past, the medical man made no charge for his services ; he was supposed to give his attention gratuitiously, and received therefor such a reward in the shape of an honoriarum as the gratitude and purse of the patient allowed. It was this ethical feature above all others that characterized him as a professional man and distinguished him from his commercial inferiors (?). To-day it is the universal custom for him to present a bill, or at least name a fee, for whatever of service he has rendered. Therefore, no matter in what light he may consider it, he has to that extent adopted the commercial method by placing a money-valuation upon his work. This has nothing whatever to do with the question of the actual value of his services, for in many instances they are not measurable in terms of money-value. It simply means that he rightfully expects compensation to the amount of his bill for his services. By the same line of argument a dentist expects to be remunerated for his services, and for the same reason. Now, there can be no doubt, unless it should so happen that the services mutually rendered by physican and dentist in a given case were practically equal in money-value, that dissatisfaction must in time surely arise on the part of the one who rendered the greatest amount of service. The simplest, and best, way out of the difficulty is for each party in the case to pay for the services of the other. We cannot agree with Mr. Sewill's statement that it is not customary for dentists to charge medical men. It is certainly not the rule in America, though it may be the custom to some extent. Inquiry among a number of prominent American practitioners of dentistry developed the fact that they treated medical practitioners the same as any other patients, and were so treated in return, an arrangement satisfactory to all concerned. Nor does it seem to be a universal rule among the dentists of England to make no charge to medical men for dental services,—unless the fee of "half a guinea a stopping" can be so classed· Perhaps if the complaining M.D., F.R.C.S., whose letter we quote, had been charged a fee more in harmony with the size of his personal and professional dignity, he would have found less ground for offense, and not have assumed, because his dentist had upon a former occasion received gratuitous services from a medical man *cum* baronet, that he should "stop" the teeth of the entire medical profession of England free of charge in consequence.

If any exchange of courtesy is to be practiced in this connection, it should be limited to the dentist and his family physician. Anything beyond this is calculated to raise questions of equity with attendant unpleasantness which can all be avoided by the simple, soul-satisfying, and liberty-producing expedient of paying for what one gets. Under which conditions one can afford to be just as courteous as he wants to, and is not compelled to be more courteous than he ought to be.—EDITOR, *Cosmos*.

FILLING CAVITIES IN BONES WITH COPPER AMALGAM.

In his Berlin letter to our occidental contemporary, Dr. Geo. Martin writes of this interesting subject as follows:

The successsul treatment of cavities in bone resulting from osteomyelitis and tuberculosis is one of the most difficult problems with which surgeons have to deal, previous attempts in the direction taken by Dr. Mayer, such as filling the cavities with plaster of Paris, bone preparations, etc., not having lead to favorable results.

The experiments of Dr. Mayer should be interesting to the readers of the *Pacific Coast Dentist:* Partly because they treat of a subject closely allied to dental surgery; also because the experimentor used the same materials and methods which are employed by dentists in treating teeth; and, *finally*, because he arrived at the idea through a lecture of a dentist—Prof. Miller, president of the American Association of Physicians, of Berlin.

The possibility that foreign bodies (fillings) may be permanently encapsuled in bone is dependent upon many factors, and the conditions are by no means as simple as those to be considered in filling teeth. So much, however, was clear to Dr. Mayer, that the material used must not be only aseptic but antiseptic, becaust it is not possible to completely sterilize the cavities in bone before filling; furthermore, the material must be as light as possible, non-toxic, and rapidly hardening. Among the materials used were: (1) *Aluminum*, employed on account of its lightness, but he found it possessed no other desirable quality; (2) *Plaster of Paris* was too porus, and also hardened on the surrounding fleshy parts, causing much unnecessary trouble; (3) Different *fusible alloys* melting at 55° R.–63° R., were tried, but found objectionable on account of not flowing properly, caused by their hardening rapidly when coming in contact with a surface of lower temperature than the material used; (4) *Plaster of Paris* mixed with a 5 per cent solution of carbolic acid exerted antiseptic action, but it was not lasting; (5) *Oxy-phosphate* cement exerted little if any antiseptic action; (6) *Copper amalgam* mixed to a pasty mass was tried, as prepared for use in dentistry. A thin lining being covered over the surface of the cavity, and filled out with lighter materials, such as cement, gutta-percha, etc., proved of great antiseptic power.

The experiments with copper amalgam by Dr. Mayer were upon dogs, and after completion indicated perfect success. It is a more difficult operation applying the materials to carious bone, than for the dentist to apply his filling materials to carious teeth. We not only have a comparatively dry substance to operate upon, but have the coffer-dam if necessary to assist in excluding moisture. Prof. Sonnenberg used the copper amalgam in treating two patients affected with osteomyelitis at Moabit Hospital, Berlin, and spoke very highly of its antiseptic action, and the results produced by it. Dr. Mayer also demonstrated and proved the antiseptic action of copper amalgam upon plate culture. He does not claim to have fully established the therapeutic value of his method of treating bone cavities; so difficult a problem cannot, of course, be solved without many more experiments and clinical tests than he has yet been able to make. So far, however, his experiments tend to show that a material has been in use for a number of years by dentists which may prove of greater service and utility in the practice of surgery.

Dr. Mayer's work has excited the interest of some of the most eminent surgeons of Germany, and the general interest taken in the question is shown by the fact that claims of priority in the method of treatment have been made by different investigators, though the merit of having introduced dental materials and improved method of operating undoubtedly rests with Dr. Mayer, who enjoyed the advantage of the advice of Prof. Miller.—*Pacific Coast Dentist.*

A WORD TO STUDENTS.

The Canadian, like the English dental student, has to go through an apprenticeship in the laboratory and office; the first year exclusively in the laboratory, as well as the interval between the opening and closing of college. Moreover, when in college he has under his care property not his own. It may not be amiss to remind the boys that they are morally responsible for the care of laboratory tools and implements; that it is mean, to say the least of it. consciously to abuse and destroy these properties; that it is, in fact, criminal to use a valuable pivot-punch to turn a bolt, rather than cross the room to get the ten-cent wrench made for that purpose, or to leave files, scrapers, etc., to rust in puddles of water, and letter-pads literally covered with the debris of polishing powders. He would be a fool were he to ill-use goods belonging to himself. He is that, and a bit of a knave perhaps, if he consciously ill-uses those of his tutor. Selfishness may make him careful of his own; honor and duty should make him careful of what does not belong to him. We have known students work all day, even in plaster, on a velvet carpet, and leave not a speck on the floor, while others are up to their own ears in dirt, and seem to like it. The student in the laboratory can educate himself as a gentleman and as a man of honor, as well as in dental mechanism. It will pay him to educate himself in cleanliness and the care of instruments, lathes, vulcanizers, etc. When he becomes a dentist, cleanliness and care will have become a part of his nature.

If we were asked, " What in a word is the leading characteristic of an ideal student ? " we would reply, " Doing as a student what he would like to have done to him when he has students of his own under him as a dentist." Perhaps, too, one of the most important points of the moral code in the laboratory might be summarized as follows: " Doing the very best one can in every detail of duty, and ambitious to do more and better than even duty expects one to do." —*Dominion Dental Journal.*

CHEAP BRUSHES AND PICKS.

Cheap tooth brushes are responsible for many obscure throat, stomach and intestinal ailments. The bristles are only glued on and come off by the half dozen when wet and brought in contact with the teeth. But recently an operation for appendicitis upon a patient at Albany, N. Y., revealed the fact that the trouble was due to the presence of tooth brush bristles. The market is flooded with these cheap goods and the unwary customer buys them because they are cheap and he has not been taught the difference between the construction of poor and good, or the danger that lurks in the shedded bristle. We, as teachers of the public, should never miss an opportunity to recommend reliable makes of tooth brushes, nor fail to point out the dangers of the poorly constructed article. A recent case in practice ilustrates other undesirable results from loose bristles. A patient presented, complaining of very sore tooth and much pain about it. Examination revealed undecayed superior bicuspid, sore to the touch, somewhat loosened, and a high state of inflammation and some swelling in the surrounding gum tissue. In exploring the open pocket in the gum about the neck of the tooth a tooth brush bristle was dislodged. The case was treated, the periosteal and gingival inflammation gradually subsided and the tissues returned to their normal condition.

Probably every observing dentist has noticed this same trouble induced by splinters of wooden tooth picks, minute pieces of rubber dam, etc. In regard to tooth picks, the wooden pick is an abomination, but again its presence prevails on account of its cheapness. The gold tooth pick is "a thing of beauty," but not always "a joy forever," as its continuous use is liable to prepare the teeth for a visit to the dentist. A good quill pick is the best pick and every dentist should impress this upon the mind of the patient. A little advice of this kind is not only beneficial to the patient, but in various ways to the dentist himself.—Editor, *Ohio.*

THE HONOR OF DISCOVERY.

The question who may claim the honor of original discovery will ever remain a difficult one to answer, if this is meant to apply to one who has shown a capability of formulating an idea without the aid of the work of generations preceding him. To confine this within such narrow bounds would simply be placing an impassable barrier to all progress. The absurdity of this idea needs no comment.

Every investigator must make use of the machinery at his command as aids in development, but the materializing of his conceptions may nevertheless be above and beyond the thought and work of any preceding age.

It is certainly an error to suppose that a fractional idea constitutes an entire conception, yet this would seem to be the thought of many, for the moment a new invention or process is announced there arises numerous claimants for the honor of original discovery. When these claims are subjected to examination, they ordinarily prove to have been ideas in an inchoate condition and incapable of resulting in any form of value.

In illustration of this view it is only necessary to refer to several prominent instances. All are familiar with the history of the discovery of anæsthesia, by Horace Wells, and how the attempts to deprive him of this honor cost him his mental balance and his life. Yet Horace Wells had nothing to do with the discovery of the agent used. Keen observation and quick perception, rather than profound thought, led to the result, but it was just these qualities which enabled him to reason from cause to effect in advance of all others who had made use of nitrous oxide.

It is well known that, when Dr. Bonwill introduced the electric mallet, determined efforts were made to prove that others had preceded him, but, fortunately for justice, these attempts failed ; yet Dr. Bonwill was indebted for much of his work, in fact could not have made the mallet, but for the results previously accomplished by electricians,—indeed, the click of the telegraph sounder suggested the idea to him.

Electricians failed to make use of their own discoveries in the direction of sending messages, and it was reserved for Morse to point out the way and be received with deserved honor as the discoverer of the process of telegraphy.

The investigation into the origin of dental caries made slow progress, notwithstanding the work of histologists from Leeuwenhoek to Ficinus, Tomes and Klencke to Leber and Rottenstein, Milles and Underwood, and to the final work of Miller. The foundations were laid before the latter began his labors, but on these he builded better than those who had preceded him, and so thoroughly proved his work as he progressed, that the last word has been said upon the subject or its origin.

When Stebbins proved that nitrate of silver would stop the progress of caries, and demonstrated it by a series of exact and long-continued experiments in the mouth, there arose immediately claimants for the honor of this discovery from all points of the compass; but it was the old story over again, of imperfect experimentation, and missing the vital and important point as demonstrated in deciduous teeth by the real discoverer.

All who have done any labor in a given direction deserve and should receive due credit, but the man who proves his work or makes a practical machine, develops an idea, creates a new ideal in art, or opens up ways which will lead directly to uplifting the burdens of the human family, is a discoverer in the truest and best sense, a blessing to humanity and an honor to his age.—EDITOR, *International.*

RUBBER AS A BASE FOR ARTIFICIAL DENTURES.

Rubber as a base is good, in fact the best of all so-called cheap bases, but it has been made too cheap by a majority of the profession ; so cheap, in fact, that I care not how well a man may know how to use it, he can not afford to spend the time and give it the care that he ought to, to get good results. I will venture the assertion that out of the thousands of rubber bases worn, not three per cent. are fit to be worn.

No man can make a decent, or a half-way decent plate and vulcanize it between plaster casts ; it will be porous and filthy in a very few days; it is the means through which to carry disease and death to those who wear it. Now I know that this is putting it too strong for some ; nevertheless it is true. There are men who say there is no such thing as rubber sore mouth. Now what makes so many sore throats and mouths ? I have had two cases on my hands where the persons have worn rubber plates, one for six, the other for eight years. The plates fit the mouth fairly well, in fact as good as the average, and were made by good dentists ; in these cases both have suffered with sore throat for some years, and have been treated by several different physicians,but without any marked benefit. Finally a local physician sent me a note with the patient to see if her plate fitted properly, and on examination I found a very good fit, but the mouth and throat in a bad condition, the throat red and badly swollen, the palatine portions of the mouth covered with splotches, very red center, but with a blush tinge at outer edge.

I gave it as my opinion that it was rubber poison in both these cases, and I believe I was right, for both were cured, as have been several other cases since then, by removal of the plates for a few months, with local washes. After getting well, in three cases I replaced their rubber plates with continuous gum plates ; in one case, where the red splotches appeared on the face and affected the eyes, I placed a gold plate.

In all cases there has been so far no recurrence of the disease. Now I believe it was rubber poison, because I found the plate under a magnifying glass to look something like a fine sponge, with all the things in it that Noah had in the ark, and this after it had been thoroughly washed. This state of affairs was caused by the plate not being hardened, and being porous, but to the naked eye no porosity could be discovered.

I believe that if the plates had been properly made there would not have been trouble. It was, therefore, not the fault of the rubber, but the fault of the workman. If you have a porous surface next the mucous membrane you are likely to have trouble.

A rubber plate can be made properly only between metal dies. I care not how careful a man may be with plaster casts, he cannot get that hard vitrified surface on plaster that is necessary to the comfort of the patient. Rubber should not be scraped or filed, but should be ready to polish with the brush when it comes from the vulcanizer. When we can and will take this care in our work, rubber is a good base, and when we take this care, with a good rubber to start on, we will never see or hear of a case of rubber poison.

Never put so-called air or suction cavities in any plate ; they are never called for, and are the cause of a great deal of trouble. A plate should be thin and even throughout to get good results. How many of us have seen plates that contained enough rubber to make four good plates ; in fact, how many of us have not, and are, still making such blunders every day.

A good rubber plate requires cleanliness and precision throughout, from the impression to the finishing. If we use proper care and good judgment we can make a plate with rubber that is good, clean and healthy, but if it is not made right it is the worst thing, the dirtiest, most stinking, unhealthy, disease-breeding base that we can use.—HARROLD (D. C.), *Ohio.*

THE IDEAL LABORATORY.

Prof. E. M. Goodman, of the Chicago College of Pharmacy, contributes to *The Observer* the following description of the histological laboratory of that institution, with a few suggestions in the way of further improvement:

The room is about 25x50, and in it are placed four counters with aisle all 'round except at one end of the room where the ends of two counters abut the wall.

The class is divided into sections. We seat from thirty-six to forty in a section. Two counters take thirty-six, thus giving nine students along each side. The counters are made about four feet wide with an elevation extending full length about eighteen inches high. This is divided off so that each student has a case with glass door, for his microscope, and a couple of shelves provided with a set of micro. re-agents, about twenty in number, each bottle being a two-ounce with glass cap and dipping rod. Opposite each instrument is a stool and set of drawers, five in number, filling in the space from counter to floor. At the end of the counter is a small door, the key of which is kept by the doctor; inside this door may be seen five iron rods, the ends of which are bent down; these rods move backward and forward and lock or unlock all the drawers in the row simultaneously. The drawers are unlocked for each section after they have taken their places.

Each student is provided with a kit of tools, and many of them keep them in these drawers. At the left hand end of each student's space is an Argand burner projecting up through the counter.

Upon entering the school each one is given a number corresponding with the number on the microscope, which is repeated on the case door. The box containing the objectives and oculars are also numbered and are returned to the directors' room after each session by each section, the shelves upon which they are placed are also numbered, so if a box is not promptly returned it is missed at once.

We never depend upon daylight, but use gas entirely. Experience suggests the following as improvements: The laboratory should be arranged to use daylight. The front of the room should have very small piers and be practically all glass from ceiling to within four feet of the floor; each microscope should have a separate table 18x24 inches arranged in rows, fastened to the floor with angle braces, arranged in ampitheatre form on platforms four feet wide and each one one foot higher than the one before it. An aisle of two feet should be between each two tables and these should be provided with one more drawer than there are sections in the class, the extra drawer being for the instrument. For laboratory work the Argand burner should never be used, a plain fish-tail, consuming half a foot, should be placed at the farthest left hand corner of the table. They should not be provided with either chimney or shade, but each burner should have a perpendicular strip of blue glass between the student and flame.

It seems to be a natural failing on the part of students to consume all the gas which will pass through a burner, whether it be three feet or six, while a flat flame an inch or an inch and a quarter wide, is all sufficient for laboratory work.

By the arrangement of tables as here suggested, daylight could be used on all but very dark days, and each student is isolated.

EXTIRPATE THE PULP AND FILL WITH WAX.

As regards exposed pulps, capping, etc., circumstances will dictate and regulate modes of procedure. If the pulp, through excess of decay, has been exposed and is giving trouble, there is but one course to pursue, with a fair promise for satisfactory result—*devitalize* and *extirpate*. It is the surest, safest and wisest course to pursue. To devitalize, take a small pellet of cotton or bibulous paper, hold with pliers, moisten delicately with creosote, then touch to finely pulverized arsenic so as to secure the tenth, twentieth or fortieth of a grain, convey to cavity, and place, if possible, a little to one side of exposed pulp, then insert another larger pellet of cotton or paper, upon which place beeswax, and apply a warm instrument (flat oval shape amalgam plugger is best) to soften the wax and fix it in place without direct force by pressure. To press forcibly upon material in cavity over exposed pulp often causes severe pain, which can always be avoided by manipulating the wax over cotton with hot instruments. Let the preparation remain in the cavity eight, twelve or twenty hours, as the case and circumstances may require, then remove, wash out cavity and test for vitality, and let alone for ten or twelve days, never longer if avoidable. Remove with engine burs or excavators the floor of cavity for direct exposure of pulp and nerve extractors. Nine times in ten the effort will be a success, and without the slightest discomfort to the patient. By waiting as above suggested the pulp and nerve matter in root canals lose vitality, soften and leave the walls readily when effort is made to remove, leaving the pulp chamber and canals in a favorable condition for immediate filling.

In treating upper and lower molars and upper biscupids, there is often difficulty in removing all of nerve matter from the canals. The formation of anterior roots of some lower molars and buccal roots of upper, preclude the possibility of successful introduction of smallest size nerve instruments into the canals for the removal of the nerve. Under such circumstances dry out with bibulous paper and apply to pulp chamber and canal, from which the nerve has been successfully removed, creosote or campho-phenique, and pack tight with cotton slightly saturated with sandarach, and let remain a week or so, then make further effort to remove nerve matter by any means at command, use of delicate drawn temper broaches, syringes, etc. When you have, through patience and perseverance, accomplished all that can be accomplished in the effort at the removal of nerve filaments, syringe thoroughly with water, then alcohol, and as far and well as you can, saturate with creosote or campho-phenique, as above mentioned; pack well with cotton against ingress of fluids for several hours, or a day or two, if necesssary, then remove packing and dry canals as best you can, and fill root canals with beeswax and small particles of cotton fiber or embroidery silk. *Microbes*, *bacteria*, and all that class of "little varmints," so much discussed and written about, can make no impression upon beeswax; it is a perfect barrier to their progress, therefore a good material for root filling. In the use of wax, you will have to use drawn temper canal broaches or pluggers heated to flow the wax, first small size, then larger; as the canal increases in size toward pulp chamber, place at the bottom of chamber after canals are filled, a piece of rolled lead, size to suit, then fill cavity and finish to completion.

Beeswax makes a perfect root filling. It can be easily and rapidly introduced; flows freely to extremity of canal when heat is applied. No virtue in cotton or silk, simply aids in forcing and packing canals. Experience will demonstrate features of merit of all—wax, cotton and silk.

All that can be accomplished by filling canals is the preclusion of moisture and gases, and for this purpose wax excels any other material now in use; fire alone can destroy it; it is non-irritating and non-conducting in property, causes no discomfort, and can be manipulated quickly. If forced through point of root no injury will arise.—OLD PRACTIONER, *Southern*.

THE BEARINGS OF BACTERIOLOGY UPON DENTISTRY.

The study of dental caries has gone on in medicine since the days of Hippocrates himself, and many indeed have been the theories promulgated to explain it. You doubtless are all well aware of the principal of these, and have attached yourself to one or the other as the case may be, but it seems to me, looking at it from the standpoint of a bacteriologist, that the parasitic theory, as first suggested by Ficinus and elucidated by Miller and others, is the only one tenable.

You all know that fermentable sugar produced by the action of the saliva upon starch, is the commonest material found in the mouth; now, many bacteria are able to cause fermentation of this sugar, and in the process of fermentation there is produced a certain quality of free organic acids, usually lactic acid. That this commonly occurs in the mouth, Miller has conclusively shown. At one time he isolated twenty-two different mouth bacteria, sixteen of which fermented sugar and produced acid; at another time sixteen out of twenty-five produced acid. We have, then, in the production of free acid in the mouth by bacteria, the first step in the process of dental caries. Given a collection of sugared food between the teeth there takes place a local formation of acid which will naturally begin the decalcification of the dentine. But the decalcification itself would not necessarily mean the decay of the tooth; it would only mean a destruction of the mineral substance. A further step is in the penetration of other bacteria into the softened dentine, producing destruction of the organic matter.

The process thus begun appears to be continuous, as Miller has shown in some of his preparations, the bacteria penetrating the tooth by following the line of the dentinal tubules, whilst on each side there is an area of softening due to the acids secreted.

Thus these minute organisms, by developing under favorable conditions, may produce destruction which, if we consider only their minute size, would seem impossible, but by continuous secretion of acids destroying the mineral matter, followed by a secretion of ferments dissolving the organic matter, the whole tooth is slowly destroyed.

But if bacteriology only taught us that such things could be, that bacteria under such and such conditions produced such and such changes, it would be of little assistance to us. It has done more; it has shown us not only under what conditions bacteria thrive best, but it has also shown us what conditions are fatal to their growth, how we may destroy those existing and prevent others from developing. It is owing to this knowledge that the surgeons of to-day perform operations which a few years ago were considered absolutely impossible. They accept the results of bacteriology and realize that virulent bacteria are present everywhere, only waiting to gain an entrance into the human body; they act accordingly, and by the use of antiseptic solutions on their instrument, on their hands and everywhere, prevent their entrance.

In dentistry, also, antiseptic methods have been introduced which have rendered possible many operations which were formerly impossible, but it is only by a certain familiarity with the bacteria themselves we can appreciate the value of these methods so that they seem natural and not arbitrary. And it is especially necessary to realize that even in the simplest operations the more antiseptic and anti-bacterial the methods, the more certain they are to succeed without evil results following.

The whole literature of medicine and dentistry abounds in recorded cases of such things as blood-poisoning resulting from so simple an operation as the extraction of a tooth, and the danger from working in a filthy mouth without antiseptic precautions is not alone to the patient, but also to the operator. Miller quotes two very pertinent cases of blood-poisoning resulting from a slight injury to the finger of the operator; in one case from an instrument used in excavating a diseased tooth, and in the other from the sharp point of a diseased root.

That cases of infectiou do not oftener occur in dental operations performed without due regard to antiseptic precautions, does not prove that danger does not exist, but simply shows how wonderfully adapted the mouth cavity is to throw off infection.

It would be possible to add indefinitely to the list of dangers from dental operations resulting from the insufficient appreciation of the powers of these minute organisms, dangers of failure through the recrudescence of decay under an improperly placed filling, or the formation of a pulp abscess, and dangers of transferring disease from one mouth to another by the use of unclean instruments, as has occasionally occurred in the case of syphilis.

A knowledge of bacteriology is, consequently, of value to dental students because it gives them a rational explanation of the antiseptic methods which they use in their work. They do it no longer as a "rule of thumb," but because they know why they are doing it. It enables them to feel in relation to bacteria that familiarity which breeds contempt—contempt not because of their minute size, but rather because of the ease with which they can destroy them.

They must realize that the mouth is a situation peculiarly fitted for the development of bateria, and consequently swarming with them. Then when they try to inculcate hygienic care of the mouth into the minds of their patients, they are dealing with something definite and tangible. And when they perform their operations they must feel that they know where the bacteria are and how they are going to destroy them. It is this knowledge which is the basis of all antiseptic surgery, it is this knowledge which is at the bottom of all our bacteriological technique. On account of it we are able to work in the laboratory with such forms as cholera, typhoid fever or diphtheria without danger, because we know absolutely where they are and where they are not. As soon as there is any doubt about it the danger begins, for then our germs begin to be beyond our control.

Finally, I may sum up the whole bearing of bacteriology upon dentistry as upon surgery, in the words absolute cleanliness; and when I say absolute cleanliness, I mean it. I mean that you should not only think that an instrument or a tooth cavity is clean and free from living bacteria, but that you should know it, and know it absolutely beyond a doubt.—MACKENZIE (J. J.), *Dominion Dental Journal.*

DON'TS IN CROWN AND BRIDGE WORK.

This is the crowning age of dentistry; it is the time when one branch of dental science, at least, seems to have reached its acme of perfection.

Where once the ready hand would tear from its anchoring the aching member, now that hand is stayed with the injunction to spare that root. It is permitted to remain and wear a golden crown, to be looked upon by its more fortunate companions with envy. In many cases reversing the old adage, "Uneasy lies the head that wears a crown."

Then there is that vacancy where decay has got in its deadly work, where naught remains but the memory of the pangs and torments of an aching tooth, the days of labor and the nights of unrest, struggling with the question, to have it out or not? Then to succumb at last and have it out and get relief, only to find, after the clouds have rolled away, the vacant places. But, happily now a golden bridge can span the abyss of past misery and carry on the functions of those gone before.

A Crown that will not decay,
With a covering made of gold,
Where bacteria hold no sway,
But are left out in the cold.

Excuse me! I do not intend to treat upon bacteria, microbes, poetry or chestnuts, neither do I intend to tell you how to make crowns or bridge work, for you know that perhaps better than I can tell you; neither do I intend to give ideas or methods better than others, but only those that in my experience I have found best. I do not intend to tell you what to do, the exact course to guide your ship, for the ocean is wide and you can sail where you please, but to point out the rocks and shallow places, where you should not sail, or at least where I do not care to go. So for a few moments I will try and tell you what you should not do in the construction of crown and bridge work.

Don't advise crown or bridge work unless there is a fair chance of their proving a success, for one failure will count against you more than one hundred successful cases.

Don't let the glimmer of the golden dollars blind, but have courage to say no, when an uncertain case is offered.

Don't crown a tooth when it can be filled with a good prospect of saving it permanently.

Don't place a piece of bridge work before the parts are properly prepared, all roots removed that are not to be needed for anchorage, and the jaw is sufficiently healed.

Don't set a crown permanently until you have previously sealed the apex of the root, and know that it is all right. If there should be trouble when first sealed let the filling have the blame, not the crown.

Don't set a crown permanently until you have good cause to know that the root is in proper condition ; take time if there are doubts, and fill temporarily, if necessary.

Don't practice immediate root filling unless you have better luck than I have had. I have done it in many cases, but once too often.

Don't attempt to fit a band unless the root or tooth has been properly shaped, all overhanging enamel removed, the walls ground to permit a band to fit nicely to the root without overhanging and irritating parts under the gum.

Don't permit the band to set too far under the gums, also do not let any part of the crown or root be uncovered.

Don't set a crown unless you have good anchorage by tooth crown, pins, posts, or screws.

Don't attempt to make a bridge without having two or more good roots or teeth to anchor to. No bridge can stand unless it has abutments.

Don't anchor a bridge by bands or half crowns. Let me read this over again. Don't anchor a bridge by bands or half-crowns.

Don't hesitate to incise the incisors or cuspids if necessary, to do so by the heroic method, extracting the pulp alive ; there is little or no pain when the pulp is healthy and it is done properly.

Don't crown the anterior teeth with gold, making an advertising bill board of a patient's mouth.

Don't use ready made gold crowns ; you cannot properly adjust them to the roots, the adjoining teeth or the occlusion.

Don't leave porcelains unprotected, but put a thick facing of gold upon the grinding surface.

Don't make a bridge without having it self-cleansing.

Don't depend upon the gum to help support a bridge.

Don't trust a bridge that has too much curve in the arch, the leverage of the curve will cant the teeth anchored to.

Don't anchor a bridge by inserting a pin or bar into an adjoining tooth or cavity and expect the filling or anchorage to be permanent.

Don't extend a tooth far when attached to a shell crown. In such a case have the band heavier, and never extend more than one tooth.

Don't depend upon the band alone to anchor a porcelain faced anterior crown without having pin or post inserted into the pulp chamber.

Don't set a crown piece of bridge work when you know of a flaw in the work that will be likely to endanger the durability of the case. It it better to correct it before it is set, rather than have to remove it.

Don't permit sudden change of heat in soldering with porcelain, but heat and cool off gradually.

Don't be careless in backing porcelain ; use plantinum or pure gold, and see that the edges are even and close fitting.

Don't use thin gold for the grinding surfaces, swedge from thick gold or fill well with solder, so as to form a lasting surface ; be honest, be generous, and you will have your reward.

Don't lose sight of the fact that the articulation is one of the most important points in the construction of a bridge, for its durability and permancy of anchorage.

Don't lap the ends of the band, but place them end to end, then when they are finished there will be no seam or unsightly ridge.

Don't place the solder on the outside, but in, where it will not show, and help strengthen the parts joined.

Don't use gold with much contrast of color ; have the solder as near in color and karat as possible.

Don't use pure gold for grinding surfaces, or in places where there is much wear.

Don't use soft solder in any part of the construction or in repairs.

Don't use tinned binding wire in soldering, but small iron wire, then the solder will not unite with it so readily.

Don't waste your filings or scraps, but keep clean and remelt, getting steel filings out with a horseshoe magnet.

Don't put the steel pliers or instruments into the acid you use for removing the oxidizing of the gold. It spoils the color of the gold and the instrument.

Don't flatter yourself that a gold crown made to resemble a cheese box is better than one with the proper cusps and contour.

Don't set a crown to a root or tooth that is not dry, and expect it to stay.

Don't leave a hole through the grinding surface of a shell crown to permit the excess of cement to escape. It is not necessary.

Don't leave cement under the gum or between to harden and irritate.

Don't fail to join the Dental Protective Association of Chicago. "In union there is strength." It will do you no harm, and it may do you good.

Don't permit me to burden you longer with what I don't know.—Crittenden (H. L.), *Review.*

DON'T.

Don't write papers on "don't." Tell people what to do and tell it in your best style. Copy what is good from others and give credit for it. Don't give histories of mythical cases, and don't recommend a new method on one trial—try again. Give us your individual thought, your individual experience, your individual experiments. Read what other have written on a subject and thrash it over till its own father will not know it, but don't write a paper on don'ts. If you make a discovery, tell it at once ; don't wait till next year or you don't get credit for it. Don't wait a minute longer, but write that paper *now.*—Editor, *Review.*

VITALITY CONDITIONED.

The native inhabitants of Greenland and Labrador, living almost exclusively upon animal food, preferably that which is fat, have very fine teeth almost entirely free from decay. The same is true of the Gauchos, a tribe of cattle-breeding people inhabiting the great up-land plains of South America, and subsisting entirely upon a meat diet. This same people, living in another part of the country, in towns, and consuming a mixed diet, suffer considerably from decay of the teeth. The Scotch people, who eat large quantities of oatmeal, and the Chinese, who live almost exclusively upon a vegetable diet, have, as already mentioned, very poor teeth. The only conclusion which can be drawn from a careful examination of the foods of all nations is that vigorous people may be perfectly nourished on a great variety of food materials, while the most carefully selected diet will not maintain a high standard of vitality among a people where there is a prodigal waste of nervous energy.—Williams (J. S.)

DIPLOMA MILL IN KANSAS CITY.

The history of this concern shows that some years ago J. T. Atkinson procured a charter for the Kansas City College of Dental Surgery, and until lately used the charter to help along his "Cheap John" painless extracting shop. Within the last six months, however, he no doubt thought that, as times were hard, he could trap some unwary "old practioner" into his new scheme to obtain a diploma without doing much except paying fees. At this so-called college at 1017 Walnut street there is nothing but a very commonly furnished dental office, where the chief business is wholesale extraction of teeth and making of rubber plates. There is nothing there belonging to a dental college—no faculty, no room, no nothing. This man Atkinson told the editor of the *Western Dental Journal*, a few days ago, that he was "*going to get up a faculty right off.*" He has talked that way for two or three years and he has made efforts to get teachers, but every man he has approached laughed at the project.

We have received dozens of these circulars from all parts of the United States. Many old practioners have written that they felt insulted to have the communication sent them; others calling attention to the fraud and hotly advising that they shall be prosecuted; others write to enquire if this is the "kind of business the Kansas City Dental College does." These last are hardly to be excused for even for a moment believing that the reputable Kansas City Dental College would be guilty of such a thing. The similarity in name, however, accounts for the mistake. It also shows that men who ought to have more sense have answered the Atkinson circulars, because they have been addressed to the secretary of the Kansas City Dental College and opened by him and then sent on to 1017 Walnut street. No doubt many a matriculation fee has come to this fraudulent concern, for promises to send it have been made in letters from the victims.

We call upon every dental publication in the land to publish this new Delavan fraud to the world. The Kansas City dentists have appealed to the authorities, and no doubt these circulars which make false representations will soon be excluded from the mails, and the concern closed. In the meantime we warn all to beware of the Kansas City College of Dental Surgery.

The fraud dental college in Kansas City at 1017 Walnut street, run by "J. T. Atkinson, Secy.," which we exposed in the October number of the *Western Dental Journal*, is called the "Kansas City College of Dental Surgery." *Remember the name.* We ask every dental journal to unite in suppressing and exposing this concern.—*Western Dental Journal.*

DENTAL FAKES AND FAKIRS OF THE FAIR.

The World's Fair having closed we presume the dental fakirs will, with others of the brood, desert us and go to San Francisco, Antwerp and Chili. Such an amount of indecent dentistry was never inflicted on visitors to any city (unless in Paris, 1889), as in the six months just closed. The writer has seen whole mouths ruined by the adjustment of gold crowns over living and other teeth —done solely for gain. There is no excuse for the attachment or adjustment of a gold crown to a central or lateral incisor or cuspid tooth. Teeth, to the shame be it said of men, have been covered with fac similes of oyster cans, stove pipes and tin horns by the horde of quacks in Chicago.

This perversion of the uses and benefits of dental surgery by mountebanks and others, practicing dentistry in defiance of law, needs the attention of the officers of the State Board of Dental Examiners to clear the city of such blots on the body of the profession. Fortunately even the inducement of very small fees is having a tendency to arrest the flow of patronage to such irregular shops. Nowhere in America have we seen such flaming advertisements as are found in the daily papers of Chicago. The advertiser in Great Britain gives us points as to matter and ingeniousness, but even without a World's Fair it is bad enough in London. There would not be such just cause for complaint on the part of the public, if the promises of the advertiser were kept with his victims. If he really did serviceable, though cheap dentistry—but he does not. The plates that are made, the bridges that are set, and the fillings inserted are not done on honor—at best they are poorly made, finished worse, and fillings are inserted over unfilled roots solely for the fee. Sound teeth are extracted for the pittance of money so small that we wonder such persons can call themselves men when they think of the irreparable damage done to the client.

How any professed professional man can take a fee for mutilating, unnecessarily, a human being is beyond our comprehension.

The reader may ask what are we to do about it. We say—too truly, that the commercial spirit is too prevalent, without the necessary business honor to give good goods for the price paid. It would not be so bad if the cheap advertising dentists were to give value received, but they do not. They employ incompetent, illegal, uneducated men, and their motto is to "hold up" the patients for all that can be gotten out of them, whether the services are good or bad. The "accidents," from lack of control of engine burs, disks and other instruments, the transmission of syphilis by using unwashed and unclean instruments, and the other ills that the public suffer from the "commercial" dishonest dentist, or pseudo-dentist, or ignorant pretender are too numerous to catalogue.

To think that decent men will fraternize with such cattle is sickening. One who is employed in such company said he had lost all self-respect, could not think he was a man, had lost all manly feelings and attributes. We felt sorry for him, but what can be done in such a case.

Well, to avoid a little of it in the future, cheap and nasty colleges must be squelched, blotted out. They must not exist. Decent, reputable colleges must refuse to take uneducated, ill-bred, vicious students. They must refuse absolutely to take one from a "shop," a "parlor," an "association," an "old established," an "infirmary," or other illegal establishment, no matter where located. The appointees of the executive must execute the law as they find it, and rid the State of these stenches in the nostrils of the public, and justify the confidence placed in them.

This must be done without fear or favor; no guilty one must be allowed to escape. The atmosphere must be cleared and the users of secret local anæsthetics, and others using such things illegally, must be driven out, stamped out as we would stamp out anarchy, smallpox, or anything else that was a menace to the public health.

Gentlemen of the State Board of Dental Examiners, do your duty, and make a trial to execute the law as we find it, and you will receive the support and encouragement of the best elements of the profession.—EDITOR, *Review.*

EVIDENCES OF PRE-HISTORIC DENTISTRY IN CENTRAL AMERICA.

Perhaps one of the most interesting exhibitions of pre-historic dental work that the world has ever known may be seen within a few months in the Central American exhibit of the Peabody Museum at Cambridge, the result of a recent exploring expedition at Copan, Honduras. This collection is fast being put in order, and will soon be on exhibition. It seems particularly fitting that a brief description of this work should be given at this meeting,—the dental section of the first Pan-American Medical Congress,—showing as it does the skill of the workmen of Central America, who did the work over a thousand years ago.

In the report of Mr. M. H. Leville, one of the explorers, it is stated that the party found forests growing over the site of their exploration ; that workmen had to cut down these forests, and then the excavations began. A very large temple was unearthed, and near this the homes of the former occupants. Tombs were found under the floors of what appeared to be living-rooms, and it would seem that these tombs were built before the house was built, in the foundation, for the purpose of burying their dead. The contents of some of these tombs, with the exception of the various small ornaments that were found within, consisted of only particles of the former skeleton, and only the crowns of the teeth covered by enamel. All the rest had turned to dust from age. In some of them the teeth, roots and all, were fairly perfect. Many of these teeth were found to be filled on the cutting surface, from the center toward the mesial surface, forming a notch as though the shoulder had been cut in the teeth, and this was quite deep, running one-third up the length of the crown. This was found also in the lateral incisors and cuspids, but not in the bicuspids or molars. It would seem that the teeth of the men were filled in this way, while the women's teeth were filled in three points, deeply filled and beautifully polished. In the teeth of the men, as a mark of distinction perhaps, a hole was drilled and a piece of green jade inlaid. This piece was circular and beautifully polished, and inlaid in the hole that had been drilled or bored in the front surface of the enamel. These inlays varied from one-eighth to three-eighths of an inch in diameter. In one of the teeth, the left upper cuspid, there was a circular piece bored out of the enamel, making a hole three-sixteenths of an inch in diameter. and one-sixteenth of an inch in depth. It has no setting. but there are traces of a dark red cement material still adhering to the sides of the holes, and this material may have been hardened and used as an ornament instead of jade. These teeth are all more or less covered with a deposit of tartar, showing that after taking all the trouble to ornament them, they were apparently never cleaned. In this collection of jade inlays there are perhaps a dozen in perfect condition, and although they were put in over a thousand years ago, and with the rudest implements, the work would be considered a credit to the most skillful workman to-day, with all the modern appliances for this kind of work. I carefully examined these specimens with a magnifying glass, and the fitting was very perfect. In most of these the cement had kept the setting in place in the most perfect manner. In two or three of them the piece of green jade was loose, so that it and the cavity in which it fitted could be carefully examined, and so could be seen how perfectly one fitted in the other, only a little film of some kind of a white cement separating the tooth. In no cases could I find any traces of decay around the inlays, although some of them had been in place a long time during life, as is clearly shown by a thin film of tartar covering the surface of the enamel. Is not this the first record of an inlay, having been placed there over a thousand years ago?

With the description of one other specimen I have done. This is by all means the most interesting of all these specimens from Copan. It is a superior left lateral incisor, made from some kind of a fine dark stone, taken with other teeth which had inlays from one of the skulls found in a grave there, and Mr. Leville, who found it, assures me that it was taken from the socket of the inferior left lateral incisor, where it had been implanted for over a thousand years. There were no bands or anything of the kind to hold it in place, but that it had been in place and in use is clearly shown by a considerable deposition of tartar upon it. But for its color it would be a very fair representation of a lateral incisor, the root being smooth and rounded, like the root of a tooth. I have no doubt that this is the earliest case of implantation on record. The entire collection from this exploring expedition in Central America is one of very rare beauty, and it would well repay a visit to the Peabody Museum in Cambridge.—ANDREWS (R. R.), *Cosmos.*

AN AQUEOUS SOLUTION OF HEMATOXYIN WHICH DOES NOT READILY DETERIORATE.

For most of the purposes of histology there is no more satisfactory and generally applicable stain than hematoxylin, and experience has shown that aqueous solutions are on the whole preferable to those containing a considerable quantity of alcohol. Every microscopist knows, however, that aqeous solutions of hematoxylin soon begin to deposit a dark precipitate on the bottle and become filled with granules and frequently with threads.

As so many changes are due to living ferments (organized ferments, as bacteria, yeast-like fungi, etc.), it occurred to the writer that the deterioration of the hematoxylin might be due, wholly or in part, to one or more of these organized ferments. If this supposition is correct, any ferments accidentally present in the water and alum used, should be destroyed. If then some substance is added to the solution to prevent the development of germs that might subsequently get into the solution, the solution would be likely to be lasting and to retain its excellence. Experiments proved the accuracy of the hypothesis. An aqueous solution of hematoxylin prepared as directed below and made nearly a year previous to the present writing is still in excellent condition. During the year it has been in the laboratory and subjected to all the vicissitudes of heat, dust, light, and all the other conditions that an ordinary histological re-agent must endure. It has remained in the same bottle all the time, and now, after nearly a year, there is no deposit on the bottle, and the stain acts as well as the beginning.

Formula :

Distilled water	200 cc.
Potash or ammonia alum	7½ grams.
Chloral hydrate	4 grams.
Hematoxylin crystals	1-10 gram.

To prepare the solution, place the water and alum in an agate or porcelain vessel and boil for five minutes or more, preferably fifteen or twenty minutes if the water is not freely distilled. Allow the boiled alum solution to cool, and add sufficient freshly boiled distilled water to compensate for evaporation and make 200 cc. of alum water. Add the chloral hydrate and dissolve the hematoxylin crystals in 10 cc. of 95 per cent. alcohol and add to the mixture.

At first the color will be rather faint, but after a week or two it will become a deep purple. The deepening of the color is more rapid if the bottle is uncorked in the light and is shaken occasionally.

If the stain is too concentrated it may be diluted with freshly distilled water or with a mixture of water, alum, and chloral. If the stain is not sufficiently concentrated more hematoxylin may be added. With hematoxylin of the strength given in the formula, sections are usually sufficiently stained in from one to five minutes.

As may inferred from what was said above, the boiling is to destroy any living ferments present in the water or alum, and the chloral hydrate is to prevent the development of germs which accidentally reach the solution after it is made.

No precaution is necessary in using this stain for sections, except that applicable to all hematoxylin sections, viz : after staining, the surplus stain must very thoroughly washed away with distilled water ; otherwise black granules or needles will appear in or upon the sections. If granules appear in the preparations in spite of the washing, it will be well to boil the solution three to five minutes and filter through paper or absorbent cotton. The addition of one or two per cent. of chloral after the boiling is also advantageous. This stain has not been tried for dyeing in bulk. Other substances than chloral were tried, but not with good success. For stains other than hematoxylin, chloral might not prove so satisfactory a preservative.

As hematoxylin is for most tissues, almost a pure nuclear dye, it has been found advantageous to stain the cell body, ground substance, etc., with a general or counter stain. One of the most satisfactory of these eosin, prepared as follows :

Distilled water	50 cc.
95 per cent. alcohol	50 cc.
Dry eosin	1-10 gram.

The eosin is used after the hematoxylin in most cases, and, as it is in alcoholic solution, it may be washed off with 95 per cent. alcohol if the object is to be mounted in balsam. If it is to be mounted in glycerine or glycerine jelly, the excess of eosin should be washed away with distilled water.

An excellent counter stain for many objects is picric acid. One proceeds with this as with the eosin, except that a saturated alcoholic solution is made and after the hematoxlyin is washed away a drop of the picric acid solution is added. This is then washed away with 95 per cent. alcohol. The time required for the eosin or the picric acid is very short, usually only a few seconds.—GAGE (S. H.) *Trans. Am. Micro. Society.*

SANITARY BREAD.

When a germ is introduced in the blood of a human being or animal it attacks certain elements of the blood or tissues and destroys their structure and function to a great extent.

These germs may seem too small to talk about, but we all know the havoc which is made when infectious and contagious diseases lay hold of the human organism.

All yeast is a mass of germs, which, when introduced into any compound of starch where water and warmth are present, produces fermentation and disorganization. The organic structure of the starch is changed to a habitation for generating myriads of germs. This process developes carbonic gases through the mixture, and the good housekeeper declares her "bread is raised." It is moulded and perhaps subjected to the same process again.

Baking arrests the process of the fermentation and decomposition, but as soon as the bread has passed into the stomach where heat and moisture again take hold of it, changes go on, and the result is a favorable habitation for yeast germs in abundance, as well as disease germs of all kinds.

Cholera, typhoid fever, and indeed all contagious and infectious diseases would find in such a laboratory favorable conditions for habitation.

I do not wish to set up any false alarm among the well-regulated households of this country, nor injure the bread and cracker business of our cities and towns, for I hardly know of a greater charity to the poor in winter than the distribution of bread, crackers and cakes, which are most liberally given. In visiting a bakery I find that one barrel of flour makes four barrels of crackers, and that all shapes and sizes of crackers are made with yeast. I also learn that the fermenting process is called "rotting" process, because, as I was informed it made the crackers more "brittle" and easier to "soak," which were two essentials if the crackers were to sell well to their patrons.

After the dough had been subjected to a long raising process, soda must be added to correct the smell and taste, and the amount necessary depended upon the condition of the dough at the time of putting it into the oven.

In households the bread-making process is not carefully watched and many a loaf of bread is set before the family well rotted or soured before baked. Other work must be carried on while the bread waits for care. Waiting not only takes out the last nutritive qualities of the flour but exposes the bread to conditions most unfavorable. Destructive elements are added by standing over night, or long hours during the day by surroundings in homes, and in other places where bread is compounded. There is no danger from the hands, arms, and clothing and other conditions of the person kneading the bread, and every housekeeper must have it "worked" a long time.

The "staff of life" is exposed in many ways to germs of disease and death which no physician can counteract wholly, nor the vital processes of the alimentary canal correct sufficiently to make good chyle and blood for distribution.

Let anyone hold a piece of bakers' bread or cracker, or much of the bread made at home between the tongue and palate for three or five minutes and the temperature of the mouth combined with the salivary secretions will carry on changes which the nerves of taste will discover to be yeast instead of the sweet taste of wheat or other grain.

No one but a physician can understand how much fermented bread has to do with the dyspeptic symptoms, and the hopeless task of correcting the symptoms as long as sour, germ-infested bread is carried into the stomach three times per day. The gastric and intestinal fluids are not sufficient in quanity nor quality to carry on a work so carelessly prepared for them. They cannot correct what ought to be corrected outside of the stomach. Nature is a very kind benefactor and mother, but hygienic laws must be obeyed. Obedience to all known laws governing the body gives self-respect, and endows the possessor with well commissioned organs and gives to daily life a dignity and purpose which cannot otherwise be gained.

It is profitable to thoroughly understand that an unerring Law Giver will allow germs to come and stay according to law, and if we do not subjugate them they will possess control and take us. Brains, eyes and hands must look out for what is passed over the palate. The faithfulness of the alimentary canal depends upon the owner, who proposes ways and means for supplying all the servant's needs.

In looking over the process of bread-making I think but one conclusion can be arrived at—that quickly made bread must be the most wholesome, as it gives to the stomach all the important constituents of the grain unchanged. Clean water and flour made of any kind of ripened grain can be made quickly by the addition of baking powder into light bread, and in half an hour from the time of compounding the materials the bread is ready to be eaten, and the great laboratory ready to convert it into chyle for the benefit of all the tissues.

There is much said against baking powders, and the old story of the old man of ninety, who was admonished for eating pork and told it was very poisonous, replied that it had been a "very slow poison." Now, if baking powders are poisonous they act very slowly, and much more slowly than yeast bread, which under all circumstances contains germs from the yeast, and favorable conditions during the hours for raising it, to generate a multitude of germs that no man can number. Another objection made against quickly made bread is that it is eaten too soon after baking. Now this is most fallacious. If warm bread is relished it certainly is not against law to eat it. All food to be converted into chyle and blood must be heated to a vital point. The vital heat in a large class of dyspeptics is below normal and a slice of cold yeast bread goes on with decomposing processes which impairs all other food while a warm roll or griddle cake quickly made will be immediately converted as far as possible in the stomach into normal ingesta. The much abused buckwheat cakes are also palatable and profitable as food, if made of clean water and flour and baking powder, to throw gas bubbles through the mixture, and baked immediately.

Tne eruptions and headaches and billious conditions after a winter's campaign of buckwheat are all due to the fact that the "pot" of buckwheat dough is a "yeast pot" all the winter through. Each day fresh flour and water is added, and if the weather or unfavorable conditions are present, which is often the case, soda added to sweeten the mixture and the family breakfast made of the cakes. Once in the stomach all the conditions are present for a ferment. After days and weeks of these fermented cakes for breakfast, the blood becomes over-plussed with yeast germs, and all the machinery of the body oppressed and everybody supposes the head aches, eruptions, etc., are the results of buckwheat cakes, but any other kind of flour treated in the same way would become rotted and mouldy beyond the slightest hope of repair and produce the same results. The chemicals used for raising bread quickly are those frequently given by the best physicians for certain dyspeptic symptoms. I know of nothing used in the powders which might not be used for correcting a sour stomach, or encouraging the digestive process. I would rather take the alkaline and acid properties of baking powder to make bread light and keep the flour sweet than to administer it after yeast bread has been eaten to cure indigestion and constipation and other symptoms arising from a disorded and much-abused stomach. Information in regard to the laws which govern the action of foods after they are introduced into the stomach, and how they become products of heat or tissues would do more to prevent acute and chronic ailments than all other known prophylactics.—Roys-Gavitt (E. M.), *Woman's Medical Jonrnal.*

THE WAR OF MICROBES.

Backer and Bruhat recently presented to the Society of Biology, of Paris, a work in which they undertake to show that it is possible, at least in certain infectious diseases, to combat one specific microbe by means of another. Some intimations of the results of the researches of these men have been made public, but in this volume they give a complete resume of the remarkable investigations in which they have been engaged during the last twelve years.

One of the most interesting observations made by these gentlemen is the fact that the cells of yeast are capable of acting in precisely the same manner as polynucleated phagocytes. These cells not only absorb microbes, but destroy them, as is shown by the fact that they lose their property of coloration by blue aniline. They have also shown that the presence of neither the diphtheria coccus nor bacillus of diphtheria interferes with the transformation of sugar into alkaline carbonic acid gas by the yeast germ. The authors find in these facts an explanation of the beneficial results obtained in the treatment of diphtheria by means of yeast. They suggest that the invertin and the disease produced by the yeast cells antagonize the toxic distases produced by the diphtheria microbes which paralyze the leucocytes of the blood, and thus destroys their ability to combat the invading microbes, while the yeast cells aetively attack the diphtheria microbes in the same manner as do the leucocytes and other cells which possess the functions of the pagocytoses.—*Exchange.*

THE AMERICAN ONE-SEVENTY-FIFTH OBJECTIVE.

On July 1st, 1873, Robert B. Tolles delivered this objective to Dr. G. B. Harriman, who had ordered it for the purpose of working up his demonstrations in dental histology. The price paid was $400.

No mention was made of the one-seventy-fifth at the Tercentennial of the microscope lately celebrated at Antwerp. Only a few months ago, the very distinguished Professor J. D. Dana, of Yale, whose academic and scientific titles number 25 in the Harvard quinquennial of 1890, and whose gold, silver and bronze medals of American, European and Austrailian honors number twelve or more, said when this objective was shown to him that he had not before known that there was a seventy-fifth objective. It is therefore time the one-seventy-fifth was better known. America has produced the highest power objectives for telescopes and microscopes and America should enjoy this credit with no disparagement to others.

DESCRIPTION.

American. Tolles. Wet or dry. Three systems. 170° angular aperture. Working distance 1-250 inch. Magnifies at ten inches from its face, as much as a biconvex lens of 1-75th inch focus, to-wit. 750 diameters,—with a two-inch ocular 3750 diameters,—with a one-inch ocular 7500 diameters,—with a ½ inch ocular 15,000 diameters.

Screw collar moves 45.° Facial aperture of lens 1-64th inch. The mathematical formulas of this objective cover two pages of foolscap, which are or were in the hands of Mr. John Green, of East Boston. It can be used only on a first-class stand. This the writer has practically proved.

ITS UNIQUE POSITION.

Paris.—No word has come from Paris that anything like this objective has been made in France. The French accord this precedence to America and pronounce the photographs from this objective as not inferior to any ever taken.

London.—In 1889, a representative of Mess. Powell & Lealand looked through the 1-75th, expressed satisfaction in its performance and gave Mr. Tolles the highest compliments. He said he had made a 1-80th, but that it was not practically useful. In 1890, an Englishman in Berlin told me that photographs had been taken with the 1-80th, but this does not annul the priority of the 1-75th's work in 1876.

The following incident gives a bit of evidence: In 1889, calling on a high London official of the largest medical society in the world, I asked him if he was interested in microphotography. Said he, with great dignity: "Yes, and I have taken photographs with the highest power ever used, to-wit, the 1-15th inch objective," I asked him if he would like to see some taken with the 1-75th. With some placid surprise he assented and they were shown. All his icy demeanor melted away in the most genial, warm, cordial and even effusive politeness. In the same year the following saw the objective and its work, conceding its position: Sir Morell Mackenzie, Surgeon-General Mackinnon, the highest medical official of the British army; his staff at the war office; the Lord Mayor, 1889-1890; the medical mess at Aldershot; Assistant Professor Lennox of the Royal Institution, the Society of Science, Letters and Art.

Berlin.—In 1890, said the representative of one of the largest German microscope manufactories, after seeing red blood corpuscles demonstrated by this objective and its stand from Boston: "Doctor, I thank you very much for this splendid exhibition. It is the event of my life. I never saw such instruments before. We don't make them as they will not pay for them."

Vienna.—Here is a letter from Dr. Kohler, written to me on January 29th, 1891, in which he says: "The undersigned, who at the 10th International Congress at Berlin in 1890, displayed a considerable number of photos, proposes to do the same at a lecture before the Royal Imperial Society of Physicians in Vienna, illustrating the advanatges of photography for scientific purposes. In order to be up with the times, the undersigned most respectfully asks if you cannot send him, as soon as possible, a few of your best photos?"

Chicago: 1892.—Seeing in the notices of the World's Fair that special agents, sent for the purpose, had secured the most powerful microscope in the world to be brought from Europe, I was anxious to know whether it excelled the American 1-75th. I wrote to Dr. Peabody, the superintendent of the Department of Arts and Sciences, that I could not find a practically useful higher power than the 1-75th, but that after this announcement there ought to be, and that if Europe was given the first place in the procession when it belonged to America he would stir patriotism in such a way that he would be likely to hear from it. The gentleman kindly replied, through others, that there was no objective beyond the 1-75th, and invited me to exhibit it. Things beyond control prevented. There is more evidence, but the above is ample to sustain the claim that America has produced the best highest power objective, which has stood the test for twenty years.

ILLUMINATION OF THIS OBJECTIVE.—Mr. Tolles made a special substage condenser. Privileged to look through this objective at human blood, I thought that the field was darker than it ought to be, from the loss of light by reflection from the mirror, and from the smallness of the condenser lenses. I had practically found that direct light as used more than 200 years ago was more than ample for ordinary work, especially if the thin edge of the oil flame was employed with a Huygen's eyepiece, which wonderfully condenses radiant light to a focus, about a half-inch from the face of the eyepiece, the larger lens being toward the light. I asked the privilege to put these ideas into practice. It was given. All substage apparatus was removed, save the diaphragm holder, to which the B eyepiece was fitted with a roll of paste board. The eye glass with cap removed, was toward the stage. The field glass was turned towards the thin edge of the flame.

The tube of the microscope was aimed at the flame which was placed as close as possible to the stand. By a little adjustment the flame gave a field as bright and clear as an ordinary 1-5 inch field. With a little focusing, red blood was brought out distinctly. With a C eyepiece on e white blood corpuscle filled nearly the whole field. After this it was easy to get satisfactory illumination for the 1-75, with a clear and flat field, with good resolution and remarkable definition when the great amplification is considered.

The objective has done good work in three ways. *First*, in ordinary microscopy. *Second*, in heliomicroscopy. *Third*, in microphotography.

HOW THE OBJECTIVE CAME TO BE MADE IN BOSTON.

It was made, not as the yacht Vigilant, on purpose to beat a foreign one, and uphold national honor, but to help work up the subjects of some 20 papers which Dr. Harriman had written mainly on dentistry. Mr. Tolles had made his first 1-16 inch objective for Dr. H. In 1870 he made his first 1-50 also for Dr. H. Being so well satisfied with these two objectives, Dr. H. was desirous to go to the utmost stretch of human abilities in the prosecution of his demonstrations, and the verification of his resarches. He approached Mr. Tolles with a proposition to make a 1-75. Carte blanche was given as to time and price. It was a new idea. At first Mr. Tolles would not entertain it. By persistence he was induced to undertake but without giving any positive assurance as to accomplishment. When finished Mr. Tolles said he would never make another. None other has been made.

ESTIMATE OF THIS OBJECTIVE.

After a use of the 1-75, and a wide demonstration of its work for nearly twenty years, the writer thinks that it has brought out details and features of suitable objects better than lower powers have brought them out. Good judges in this and in other lands have agreed in this estimate, so that it can be said that this instrument of precision is a unique and justly famed masterpiece, that confers honor on American talent and executive abilities.

WHO WAS ROBERT B. TOLLES?

He was born in West Winstead, Conn., in September, 1827; moved to Boston in 1857, where he died in 1883. Early in life he was intensely interested in instruments of precision. In 1850 he happened into the workshop of the late Mr. C. A. Spencer, the celebrated microscope maker, and became his pupil. While at Canastota his dearly beloved wife died. To drown the bitterness of his grief he threw the whole energy of his inventive mind into the difficult work of improving the various parts of the microscope. How industrious he was is seen from the following partial list of his productions:

1. 1855. Invented and patented his solid eyepiece.
2. 1856. Invented his achromatic amplifier.
3. 1858. Achromatic pocket magnifier; flat field; triple lenses.
4. 1862. Cover adjustment by moving the back and middle combinations, the front remaining stationary.
5. 1864. Invented his binocular eyepiece. Both this and one other were copied by a German maker, and sold as his own inventions.
6. 1864. Telescopic magnifier. The principle rediscovered in Europe.
7. 1866. Prism in the side of the objective for illuminating purposes.
8. 1867. Made his first immersion lens objective, a 1-16th, that resolved Nobert's 19th band, probably the first time it was ever seen.

Witnesses, Messrs. R. C. Greenleaf and Charles Stodder, late of Boston.

9. 1867-8-9. Wet and dry fronts to the same objectives.

10. 1871-2. Very thin stage with rectangular motions by friction rollers with complete rotation on optical axis—one thing that has not been copied or imitated.

11. 1872. Semi-cylinder for proving that the angle of objectives may exceed 82° with objects mounted in balsam, by excluding all light of less incidence than half of the maximum angle.

12. 1873. The 1-75th inch objective.

13. 1875. Illuminating apparatus for microscope, swinging concentrically around the object of focal point. Universally adopted.

14. He was the first to claim 180° of angular aperture and prove it.

15. Simplified Camera Lucida.

16. Oblique illuminator.

17. Solid catoptric ocular.

18. Erecting aplanatic system eyepiece for telescope.

19. Short focus, quadruple cemented object glass for telescope.

20. Clinical stage mounted on end of objective as suggested by E. Cutter.

21. Trunnion joint to compensate for wear in stands.

During most of his residence in Boston, Mr. Tolles was a valetudinarian. He showed many signs of nervous prostration, and after his death was found to have weak lungs and pleura. Though rich in good works that conferred international fame, still he was deprived of the wealth that the richness of his resources of inventive skill should have brought. He received no reward such as his contemporary, Mr. Alvin Clarke, received for making the most powerful telescopic objective of his time; to-wit, a Rumford medal. Certainly it seems as if the maker of the most powerful microscopic objective was worthy of the same reward as the maker of the most powerful telescope.

[Note.—After this paper had been read, on a table before all, the B. microscope stand of Tolles was unpacked from its closed box, its parts described, the 1-75 and A. eyepiece were mounted and some red blood corpuscles were focused. The illumination was from a coal oil lamp with an indestructible and never trimmed clay wick. The wick is the invention of Mr. J. T. Murray of New York, a former partner of Edison. About 25 per cent. more illumination is had with this clay wick than with cotton. In turn all the audience then saw through this objective. Being the first and only time that the one-seventy-fifth and the clay wick had been used in a medical college, it is not strange that a Boston teacher of medical microscopy has since said that there was no one-seventy-fifth inch objective.]—Cutter (E.), *American Microscopical Journal.*

TREATING TEETH WITH DEAD PULPS.

I never depend upon the application of an antiseptic in the roots of teeth, but upon a material which I force in around such, with which is combined an antiseptic strong enough to answer the purpose, and virtually mummify all the material that is left in the canals of the tooth by its action. It surrounds and covers it over, and whatever portion of the pulp is left behind, is penetrated by the action of the chlorid of zinc and bichlorid of mercury that is mixed with it. Of course, if the pulps die, they die of their own accord.

I treat them all in one general way. That way is to open the pulp chamber, as carefully as I can, so that I may cleanse it thoroughly of every particle and get thoroughly into all the root canals. I then with a very fine gold-pointed syringe, use a 1 in 10,000 solution of bichlorid of mercury—a grain of bichlorid of mercury in twenty ounces of water—and syringe out these canals just as thoroughly as I can; I then with a broach or small instrument penetrate into the canals as far as I can go, stir up the contents and then wash again, repeating this until I am pretty sure that everything is clean, so that the substance coming out of the tooth as it strikes a white napkin will show a white, clean color instead of staining as when the canal is filled with dead material. When it is washed thoroughly clean I fill with oxychlorid of zinc, in which I put a drop of a solution of 1 in 1,000 of bichlorid of mercury, thus combining the antiseptic properties of the bichlorid of mercury and the penetrating and and antiseptic properties of the chlorid of zinc and oxid of zinc.

This is the material that mummifies or holds this substance that is left in the roots of the teeth, leaving it in a condition to give no trouble; and it may astonish some of you to know that instead of opening a tooth and treating it day after day for a week or more, I open a tooth and fill it at the same sitting always, unless I have periosteal irritation,—soreness of the tooth as I touch it. The crown of the tooth is filled with gold or any substance that I choose to use, of course, and I dismiss the patient after painting the gums carefully over with a solution of concentrated tincture of aconite root and tincture of iodin. That I always do before my patient leaves the chair. It is a powerful counter-irritant, and does the work of relieving the pressure around the root of the tooth. This to me is the simpliest, easiest and most quiet way of getting along with that kind of teeth.—Abbott (F.), *Congress.*

SOLAR CAUTERY AS A REMEDIAL AGENT.

Apropos of the interesting note (appended) by Dr. Baldwin, we give a brief extract from an article on this subject, by Dr. A. V. Thayer, published in the *Pacific Medical Journal:*

During a practice of more than a quarter of a century I have found no caustic or cautery to compare with solar heat in its beneficial results. Unlike other caustics it can be applied with perfect safety upon the most delicate tissues, and is at all times under the control of the operator. It has other advantages—the system receives this treatment kindly. The irritation and inflammation following its application is surprisingly slight and of short duration. Another point in its favor, the pain subsides immediately upon the removal of the lens. I have burned the skin of nearly the whole of one side of the face at one sitting, destroying the cuticle; within five minutes the burned surface would be free of pain. There is a curative power in the chemical rays of the sun yet unexplained. I avoid blistering, carrying the burning beyond this point, carbonizing the tissue.

In the treatment of morbid or malignant growths, we destroy most fully the morbid products. Upon this depends the success of the operation. The morbid tissues having less vitality than the normal, succumbs to the cautery before the natural structures adjoining are injured. This enables us to attack boldly the malignant or morbid growths without any fear of injury to the healthy tissues surrounding them.

In the primary treatment of chancre, or chancroid, this treatment stands unrivaled. Within the space of two minutes the infectious chancroid, or the true Hunterian chancre is deprived of its contagion and changed to a simple ulcer. Hemorrhoidal tumors, when external to the spincter, are bodily destroyed, and the part heals without unpleasant symptoms. Indolent ulcers of long standing take on new life after the application of solar heat. In the course of a few days healthy granulations appear, which continue to a favorable termination, especially when the general health is looked after. Granular surfaces which are inclined to bleed from the slightest touch, are changed to a healthy state. Hemorrhages from small arterial or venous vessels are checked almost instantly with the solar cautery.

Diseases of the skin of a parasitic nature are treated with marked success. Cases that have withstood the repeated attacks of the usually prescribed remedies, have succumed to one or more applications of solar heat. I believe that the pustules of small pox can be aborted, and pitting prevented with this agent. What seems surprisingly strange to me, is the fact that a remedy of so much curative power and value, and one so easily utilized, should have remained unknown to the medical profession so long.—*International Journal of Surgery.*

In December, '92, a gentleman living in S. F. was badly bitten by a dog; the sun glass was at once used and no ill effects were afterwards noticed.

A carbuncle on the neck 'of three weeks' duration' was thoroughly burnt. Recovery followed soon after; systemic remedies, however, were used in this case.

A child fell and half severed the tongue, hemorrhage was frightful, the sun glass stopped it in a moment.

A laborer in San Jose while attending a glandered horse became contaminated through the broken skin of the wrist. When first seen, a patch as large as a dollar, very much raised, angry and hard, crowned with a yellowish thick crust, was burned deeply. This was repeated after four days and again seven days later. He also took carbolic acid internally, and was discharged cured.

I might mention many other cases; these will suffice. As to detail, a 5-inch sun glass is used and brought to a ¼-inch white focus. The parts to be burned are first cleansed and shaved, and scrubbed with a 1 to 10,000 solution of corrosive sublimate. There is little or no pain, but a benumbing sensation and an odor of cooked flesh. The application is continuous and may last two or two and a half minutes. The parts soften at once and all bleeding is arrested immediately. Incisions may be then resorted to without any blood flow. In the case of boils all pain ceases and recovery is early. Practice only teaches the perfect use of this remedy which I could not do without.—Baldwin (A. E.)

HARD DEPOSITS WITHIN THE PULP CHAMBER.

Deposits of calcic material in the pulp chamber are frequently met by practitioners treating many pulps, and may be found in both normal and pathological conditions. Not many years ago some of the better men in the prosession worked diligently to induce deposits of secondary dentine as protection to pulps exposed or nearly so from decay, hoping by so doing to prolong the life of the pulp indefinitely. We hope before the paper closes to show the futility of the effort.

In speaking of these formations we will only consider such as are most frequently met by the practitioner, and whose history has been most definitely traced, leaving out those erratic growths such as dentinal tumors so rarely met.

First, let us consider deposits of calco-globulin, which are found associated with inflammation in many cases. They contain the same elements as the pulp-nodule, but are soft; they are always found in the inflamed portion near the point of exposure just beneath the layer of odontoblasts, while the pulp-nodule is found in any part of the pulp tissue, and is extremely hard. The conditions necessary for the deposition of those bodies are albumen and lime salts in solution and an excess of carbonic acid. Now let us see what condition of the pulp that frequently occurs favors these formations. Albumen and lime salts may always be found in the blood in a state of solution, and when we have a passive hyperæmia of the pulp, which means the veins of the pulp are overcharged with blood, hence venous congestion,—blood with a great portion of carbon di-oxide, we may expect these formations, provided it is not excessive in degree. Hyperæmias that result in low grade of inflammations nearly always induce these deposits. The pulp in performing its normal sensory function, its response to thermal change, is very liable to be kept in a constant state of congestion, whereby the deposit of lime salts is induced. The pulp-nodule we said might be found in any part of the pulp tissue, oftenest in the coronal portion at or near the junction of the root portion. They are irregular masses without structural form, usually very clear and transparent. They are not calcifications of the pulp tissue, but in the midst of the tissue, and must not be confounded with calcific degenerations of the pulp where the whole tissue is impregnated with lime salts. Dr. Black claims that whatever may be the circumstances attending the formation of the pulp-nodules, after they are once formed they seem to do no injury. They are found in pulps otherwise perfectly normal with tissues unchanged and performing their normal functions. They may occur of such size at or near the junction of the root portion as to interfere with circulation and thus cause degeneration. They are more often found in teeth of middle and old age than in the young.

Teeth very hard in structure have them more abundantly than those of loose structure. The principal cause inducing their formation, may be named abrasion and caries. Any circumstances that may expose the dentinal tubuli to irritation seem to favor their formation. The teeth so affected in the same mouth are not the only ones containing the pulp-nodules, but those perfectly sound will be found to contain quite as many. Any irritant making an impression upon the sensory nerve of a tooth may produce results that will be evident in all of the teeth of that individual.

Secondary dentine, a new growth caused by some abnormal condition of or injury to the tooth. This is always deposited on the wall of the pulp chamber, reducing its size. Care must be taken to distinguish between it and the normal growth of dentine. In the young the pulp chamber is very large and decreases up to a certain time. This growth is continuous with the general structure of the dentine without a line of demarkation so long as the length of the dental tubuli increases in a normal manner, but when new growth is excited by abnormal conditions there is generally a departure from the normal, which plainly defines it from the original pulp chamber, this departure from the normal varying greatly in the different cases. It may be a different direction of the tubules or a less number. The sudden decrease in the number of tubules may be the only distingishing feature. Generally there is a marked difference in the color of the new structure, by which it can be readily distinguished with the unaided eye. We see this in teeth worn by abrasion so as to expose the original pulp chamber, the new tissue is seen as a clear yellow spot.

The extent to which secondary dentine may be deposited is a question to which there are different opinions. Many holding that it may vary in quantity up to complete obliteration of the pulp chamber. As compared with the size of the pulp cavity this deposit is greater in the single rooted teeth than in the molars; it does not often extend in the root portion, if it does it is confined to the orifice of the root canal, the opening beyond being of usual or normal size. Also, if there be any difference, the deposit in molars is greater on the floor and roof of the pulp chamber and least on anterior and posterior walls.

The constricting of the orifice of the root canal is often so great as to interfere with the passing of the finest broach, but by enlarging the entrance we will find no difficulty unless the case is complicated with other hard formations than secondary dentine. Deposits of secondary dentine caused by abraision is not confined to the teeth abraded, but those not worn are affected in nearly the same degree as those actually subjected to the wear.

Growths of secondary dentine excited by caries present features entirely different from that excited by abrasion. In abrasion we found that the secondary deposits are very evenly distributed over the inner walls of the pulp cavity, while in that excited by caries we find it confined to that part of the pulp chamber opposite the fibrils irritated, throwing out a protection to the pulp against the advancing decay. The structure of the secondary dentine deposited as a protection against decay presents nearly the same characteristics as from abraded surfaces. First, a lessening of the number of tubules with deflection of their direction to the clear deposit of lime salts without structure, which indicates degeneration and final destruction of the whole pulp tissue. Of course all decayed teeth do not show formations of secondary dentine. It will be found only in those dense teeth where the decay progresses very slowly. It is only continued irritation for a long time that can induce such formations; and it will be found more pronounced in teeth well nourished where lime salts are abundantly found in the blood.

Calcifications of the tissues of the pulp will, upon examination, show traces of some of the tissues undergoing calcification. They have certain characteristics which distinguish them from the pulp-nodule with which they may be associated. They do not present the rough irregular surface of the nodule, but rather elongated, smooth surfaces. The presence of a few pulp-nodules has very little significance as far as the future health of the pulp is concerned. We find no degenerotion of the tissues of the pulp associated with them; but tissue calcification is always associated with degeneration of the uncalcified tissue of the pulp. We may find pulp-nodules in tissue undergoing tissue calcification, and may be included in these calcifications. Once formed they do not disappear and afterwards may be connected with any diseased condition that may befall the organ. The size and form of tissue calcifications vary greatly. They may be large enough to fill the pulp chamber or only minute bodies here and there in the mass of pulp tissue. They probably form very slowly, having their beginning in many centers, then uniting as they enlarge.

Cylindrical calcification occuring only in the root canal and connected with the most marked degeneration of the whole organ. It occurs at all ages—most frequently in middie life, in people who have suffered much from abrasion and decay.

The tissue removed from the canals and rolled between the fingers has a gritty feel as though it contained sand, and will bend and retain the curved position like soft wire. Dr. Black does not think these cylinders ever run together in solid mass, but become jointed by having distinct fibers running from the end of one cylinder to another. This form of calcification does not appear alone, but is found associated with any or all of the forms mentioned.

To sum up, we might state that the deposits of calco-globulin and pulp-nodules may be found in normal pulps and after formed denote no pathological significance, although they may be found connected with other and abnormal connections; and all deposits of secondary dentine, or the calcifying of the tissues of the pulp are the result of undue impressions made upon the sensory organ of the tooth which excites the pulp to renewed functional activity and must sooner or later result in complete destruction of the organ. That the irritation that induces calcific deposits in the pulp chamber and within the pulp tissue must be long continued and not excessive. If excessive, the pulp is destroyed by strangulation before the extra deposits can be formed. Hence it will be found that these changes take place during chronic diseases of the pulp, rather than the acute.—Dewey (S. B.), *Ohio.*

DRY CARIES—CARBOLIC ACID VS. IODIN IN BURSITIS AND HYDROCELE—TREATMENT OF ETHER OR CHLOROFORM NARCOSIS—HARELIP.

We condense the following from the *International Journal of Surgery's* report of certain features of Prof. Dawbarn's lectures at the New York Polyclinic:

Some years ago it was a matter of extreme interest to me to notice the striking similarity in the diseases of early life as compared with those of extreme old age. The old saying that extremes meet is nowhere better illustrated than here, and this is true not only of the mental attributes of the very old and very young, but of their physical characteristics as well. An old man and a young child are more apt to have caries of bone than persons in middle life. In the case of an infant the carious process is apt to be of the suppurative variety, while in the old person the caries belongs to the class known as caries sicca.

The patient before us illustrates this condition very well indeed. This man was operated upon two years ago and a growth cut from his right foot on suspicion that it was of the tubercular variety. There is now a slight sprouting up of granulations and I have little doubt but that if that process were followed down to the bone, considerable erosion would be found. One of the peculiarities of caries in old people is that it is more obstinate to treat than in the case of very young children. In a young child if you expose a tubercular bone and scrape it you stand a very good chance of obtaining a good result. In old persons the only chance of recovery, I believe, lies in removing the offending bone.

In this case an operation of this nature would involve removal of the head of the third metatarsal bone, and that is the procedure I advise.

In the treatment of bursitis I would say that counter-irritation is of little value. What we now do in these cases is to treat this condition as if it were a hydrocele, draw off the fluid and inject some pure carbolic acid, in the hope that it will cause a certain amount of plastic inflammation so as to bring about agglutination of the surfaces. Dr. Keys has recorded a case of multihle hydrocele of the cord into which he injected two drams of pure deliquescent carbolic acid, and no symptoms of poisoning resulted. Carbolic acid is much safer than iodin for that reason. We usually think of iodin in connection with hydrocele, but in the hands of the most expert men patients thus treated may die from iodism. Iodism is caused because the iodin, not being a caustic, enters the system through the mouths of the millions of lymphatics, but in the use of carbolic acid no such danger need be apprehended. Carbolic acid also is a fairly good anæsthetic, and has supplanted iodin in all these conditions and in inflammations of serious surfaces.

What should be done in cases of threatened death from ether or chloroform narcosis. You have seen surgeons under such conditions fill up the patients with whiskey by injection. Prof. Wood, at the International Congress at Berlin, said that he considered this treatment to be little better than murder. Our best surgeons in New York have been in the habit of using whiskey under such circumstances, but Wood calls attention to the fact that the patient is in danger of death from narcosis, and alcohol is a narcotic. He prefers a cardiac stimulant which is not a narcotic. The only reason why chloroform is more dangerous than ether is because it does not volatilize so quickly. Ether is quickly eliminated from the lungs, and for that reason a patient has a better chance of getting free from its influence. When your patient is in danger of death from ether or chloroform what treatment should you adopt? Invert your patient—in other words, have him on his head.

A famous eye doctor of Baltimore, Dr. Chisholm, simply turns the patient upside down and allows no other treatment, and claims he never had a single death from narcosis of any kind. The next thing in point of importance is artificial respiration. The late Dr. Sands told me that the most important thing for a person to do in a case of narcosis was to apply hot clothes over the heart. He thought there was a direct transmission of heat through tbe chest wall to the heart.

Prof. Wood experimented with a great many drugs, and the only two he approves of are strychnine, hypodermically, and the tincture of digitalis. Now for my plan. I have spoken of the great efficacy of the application of hot water cloths over the heart. If that is of value then how much greater would be the effect produced if you could bring hot water in direct contact with the heart. I think it a much more efficient and prompt proceeding to open a vein and pump in hot salt water to the amount of a pint or quart, then get the effect on the heart of mechanical distension of its chambers. The temperature of the water ought to be 120° F. It has been demonstrated that no albuminoid tissue in the body is coagulated or injured by less than 160° F. and so you are absolutely safe in using this degree of heat.

One of the cardinal principles of harelip operations is to make so free a dissection that there will be no tension when you bring the parts together. If there be tension you must expect the sutures to come apart. In every harelip operation try to save every scrap of tissue you can, for if you sacrifice the least amount you will have a bad result. Apply your retention sutures within the lip and leave no holes through the cuticle. Asa means of relieving tension on the sutures I take a strip of iodoform gauze, fix it to one cheek by means of collodion and fasten it to the opposite cheek. Of course, you must not understand that there are to be no coaptation sutures, but these are of such fine silk that they make hardly any hole in the cuticle.

With regard to the after treatment of a case of harelip, there are a few points of great importance that I wish to refer to. Do not allow the baby to suckle immediately after the operation or you invite disaster. One of the principal rules in surgery is to put parts at rest. Give the child paragoric enough to keep him quiet, and for the first four or five days feed him exclusively by the rectum. Rub into the skin warm cod liver oil or warm melted cocoa butter. In addition to this give him an enemata of hot beef tea, peptones or peptonized milk. In giving them use an ordinary Davidson's syringe, carrying the catheter up the bowel as far as it will go, and then the food will be retained. By these means you can keep any child in good physical condition four or five days, and at the same time keep the lip absolutely at rest.

THE MAKING OF BOOKS A TIME PROCESS.

The following editorial calls attention to the fact that bookishness is far from the standard by which scientific advancement should be judged. Some books are written, the major part of them are made, and a large percentage of both may be rated as mere boxes in which are piled the facts and fancies of men and things, classes of men, peoples, nations:

The address of Prof. Pepper before the Pan-American Medical Congress was a masterly exposition of the influence of the discovery of America upon civilization, and of the achievements of American medical science. In one particular, however, Dr. Pepper's views are open to criticism, and that is when he makes the number of new books published every year the criterion by which to judge of the scientific advancement of any nation. According to him we are behind the nations which lead in medical thought because we publish fewer new medical treatises, although more medical journals, than Germany, France or England. It is a fact, however, that many of our distinguished physicians and surgeons have written but little, owing to a natural disinclination or the exigencies of practice, yet it would be unreasonable to say that they have not contributed to scientific progress. The writing of a book demands an amount of time which is more apt to be at the disposal of the easy-going European physician than the bustling American practitioner who publishes the results of his experience in the columns of our medical journals.—*International Journal of Surgery.*

A GRAVE AS AN EXHIBIT.

By Chas. H. Ward, Rochester, N. Y.

[FOR THE ODONTOGRAPHIC JOURNAL.]

A "stone grave" from southern Ohio, probably the *first ever reconstructed*, was exhibited in the Anthropology Building at the World's Columbian Exposition.

This grave was discovered and explored in 1892 by one of the parties sent out to collect material for the exposition by Prof. F. W. Putnam, the chief of the Department of Ethnology.

Mr. Harlan I. Smith, who was Mr. Putnam's assistant in charge of this party, conceived the idea of reconstrccting the grave in the Anthropology Building and the entire task was completed under his personal supervision.

With the reproduced grave was a full label of its location and other facts relative to it and its discovery. Then there was a photograph showing the grave just as it was seen by the exploring party after they had removed the superimposed soil, but before any of the stones had been disturbed. Several photographs are usually taken of each grave during its exploration. The first to show the grave at the time of discovery, and before the structure is disturbed, but after the removal of all the earthy matrix; next a view after the removal of the cover stone, showing the interior of the cyst and the contents of the grave. Other views are taken, in some cases, to show the detsils of the burial, or in cases where the other views do not show all the points of interest. In each case the photograph is taken before the objects are moved.

All the earth must be removed from the delicate skeletons without disturbing a single bone so that photographs can be made showing the exact position of each object, without the doubt that the explorer may have made an error in replacing them To do this one must be more or less familiar with human osteology, and even then it is no slight task. Besides the photographs there was a map in a case near at hand, showing the relation of this grave to the various other remains and to the topography of the surrounding country.

From these it was learned that this reconstructed grave was one of a group found near an ancient village site on the second terrace of the Little Miami Valley, on the south side of the river about four miles west of Morrow, Warren County, Ohio, and is known as Peabody grave No. 6. Near it was found many graves of similar structure, but generally of shorter dimensions.

One of these graves was surrounded by a paved ring of limestone slabs, while not far from it was unearthed a paved ring about twenty-four feet in diameter within which, however, were found no objects human of origin.

Scattered among the graves and in the adjacent fields were many traces of the old village. Near the southern edge of this site was a conical mound about six feet high and eighty feet in diameter.

The grave, reproduced, was found just below the surface, the grass scarcely covering the highest of the stones which had been placed on edge in the grave along the sides of the body and at the head and foot. Then others were placed flatwise over these, thus forming a sort of rude box. It is probable that when made this box was somewhat symetrical, but when found, after years of nature's actions, the slabs had settled, some leaning one way and some an other. The stone slabs are from the silurian limestone outcrops, which occur in the neighborhood along the Little Miami River and its tributaries.

They could easily have been collected in the creek bottoms and are just as nature left them, not having been cut or artificially shaped in any way.

The skeleton, contained in this rude cyst, lay at full length with the head to the west end of the grave. A piece of burned limestone and a flake knife were the only objects found with the skeleton.

The stones of the grave were taken to Chicago, placed in a box of soil in exactly the same positions respectively that they were when found. Around these, at a little distance, in the same relative position as was the grass around the excavation from which the grave was taken in Ohio, was placed a strip of green turf, so that the visitor to the Anthropology Building could look into the hole in the grass plot and see the stone walled grave just as it was seen by those who uncovered it in its original location. In another sense it might be said that a small portion of Ohio, containing a stone grave in process of exploration, had been transferred into the Anthropology Building.

The main object of this exhibit was to present to the visitor a typical "stone grave," to see which would otherwise require a trip to the locality where they are found, also days of searching and hours of careful excavation.

THE REAL IMPORTANCE OF THE GEOGRAPHICAL DISTRIBUTION OF DENTAL CARIES IN ETHNOGRAPHY.

BY DR. L. THOMAS (Late Professor in *L'Ecole Dentaire*), Paris.

[TRANSLATED FOR THE ODONTOGRAPHIC JOURNAL.]

PREDISPOSITION TO CARIES IS A CONSEQUENCE OF CIVILIZATION.

The discussion of this view will not be so long as that of the first head. The Celt and the Kymri of Cæsar's time, each still a savage, had good teeth ; those of their descendants of the middle ages, were not worth so much. The population having become entirely civilized, they are absolutely forfeited.

Twenty-two years ago, M. J. R. Mummery raised the question as to what had been the condition of the teeth in the races who had successively inhabited Great Britain. In a memoire read in 1870 to the London Odontological Society, he said that the primitive dolichocephalic shepherds had little or no caries ; they were reduced to slavery by the Belgians, Celts, brachycephalic, tillers of the soil, more civilized, and more subject to caries ; that a great change followed theRoman conquest ; a veritable physical decadence accompanying luxury and civilization ; that the subject Britons adopted the habits of their conquerors, and then followed numerous dental affections.

After the withdrawal of the Romans, the Picts and Scots ravaged the west, the enervated Britons being incapable of resistance. In their terror they called from Germany the Angles and Saxons, who remained in the country. These robust and vigorous invaders had good teeth, of such a character that an amelioration was brought about in the centuries which followed ; some of the barbarians landed toward the south and established themselves there, each incursion being followed by an amelioration of the dental system, which disappeared after the new comers had adopted the sedentary life and were crossed with the aborigines.

These accounts of the history of the British Isles bring out many curious features. The Roman occupation lasted four hundred years ; it was too precarious to exercise a serious influence upon ethnical characteristics. In Gaul, fusion had resulted between the conquerors and the conquered, the later having adopted the language and customs of the former ; even in the best days of the empire, there existed in the army a legion called "the lark," composed exclusively of Celts. German legislation recognized but one foreigner in Austria and in Neustria, the Roman, proof that the two races were so mingled that their immediate neighbors no longer distinguished them.

No such thing happened in England ; the oldest chronicles represent the military colony as a foreign one whose withdrawal was regarded, and was, a deliverance. "After having oppressed the island for four hundred years," says one of them, "and having exacted three thousand silver pounds as a yearly tribute, they left for their own land of Rome, to repulse the invasion of the northern horde. They left, at their departure, only a few women and young children who all became Cambrians."

The Roman occupation was represented in its relation to the indigenous population, only by collectors of taxes, by military cohorts who did not always succeed in protecting them when the Picts and Scots crossed the Clyde in spring time in their leathern boats and pillaged indifferently the cabin or the villa. Such conditions are little favorable to the fusion of two races, to the passing of organic susceptibilities from one to the other.

It is probable that M. Mummery followed his own thought ; wishing to see in civilization a cause of detoriation, he is persuaded that organic resistance rises or falls in proportion to the advance or retrogression of the former. The Barbarians, whose invasion crushed out the luxury and corruption developed by the Romans, were next neighbors to the Normans; they belonged to the nation of Jutes, inhabiting the marshy lands north of the Elbe, and forming part of that vast confederation of peoples called Saxons, "men with long knives," in allusion to their customary weapon.

It is impossible to understand how the teeth deteriorated upon the banks of the Seine after the irruption of the pirates of the North, while improvement took place under the same conditions upon the banks of the Thames.

The crossing of races offers no better explanation of the predisposition to caries. It is not probable that the organic autonomy of the dental tissues is such that they can be feeble, ready for ulceration and necrosis, while the general condition is excellent. It is admitted, upon the authority of Virchow, that a direct relation exists between the development of the teeth and of the epithelium; the same remark applies to nutrition. It is necessary to believe that if precocious deterioration of the dental tissues is one of the manifestations of race degeneracy, the elements entering into the crossbreeding are not adapted to it; this is the case with the negroes in the United States. Since the suppression of the slave trade, their disappearance seems to be merely a matter of time, but an enfeebled dental system, predisposition to caries, represent but one particular of a general impairment. "Following the mixture of black blood and white, particular race characteristics disappear. and the definitive result of the cross-breeding, is a constitutional pulmonary weakness (A. H. Thompson)." Has something analogous been produced in Europe? History proves, on the contrary, that crossed races have shown a vitality and power of expansion superior to those of pure races.

CONCLUSION.

In the course of these studies, on account of the admitted apt analogies, I have been desirous of seeing an example of the persistence of a primitive type in its original purity for a given locality, in spite of the country being taken possession of by wholly different elements within a certain epoch. Therefore because of encountering few individuals not descended from the same type, I have made researches among races which having more lately made their appearance in the country, are known to have undergone partial change during a period of several centuries.

This has really taken place in Greenland. Discovered in the tenth century of our reckoning, and taken possession of in great part by Irish and Norwegians, it numbered, in the fourteenth century, several European settlements, as flourishing as they ever are known to be under that Northern sky. They were, however, destroyed by the Esquimaux, and the colonists driven out and dispersed among the Indians of wide North America. Greenland was again without any connection with Europe, and at the beginning of the eighteenth century not a ship had approached its shores for about three hundred years. The Scandinavian colonists had never been sufficiently numerous to entirely take the place of the first inhabitants. They themselves were conquered by the Esquimaux. A few individuals belonging to one race, imperfectly acclimated, were subjugated and partly obliberated by an entirely different people. These had now become as completely extirpated, without being able to leave any calculable trace upon the conquering race. Yet was it possible to find in Greenland, three hundred years later, the European type represented in a striking degree.

Let us now deduce from these facts the inference, which might well be assumed, that in those portions of Gallic soil permanently settled by foreign conquerors, the latter again subjugated by other conquerors of an again wholly different race, the characteristics of the invading races have been so far effaced that we may have reverted to the original Celtic or Kymric type !

The Department of the Lower Seine is that one of France in which, upon the basis of the most statistical records, the dentist's skill has always been most in requisition, recessitated by the prevalence of dental caries. Perhaps nowhere do the facts of history better agree with the hypothesis of national predisposition.

[The writer proceeds to show that the Kymric type prevailed in this region at the time the Romans invaded it and subjugated the inhabitants, established a military government, founded flourishing colonies and cities, drawing in immigration from what is now Provence, from Italy and other parts of the empire. The influx of Franks and Germans in the fifth century, could hardly have had a favorable influence upon the dental system. The same may be said of the appearance of the Normans. Whatever modification of the tendency to caries, the neatness of the Kymric races may have effected, was counter-balanced by the union with the German and Scandinavian incomers, whose teeth were bad. The writer thinks that not enough importance is usually attached to the Roman occu' pation and the diverse races absorbed into the colonies.]

How should this incoming element, energetic, active and susceptible of acclimatisation, be obliberated and disappear in the Kymric mass of population ? Why should not the Roman type in its midst, maintain itself as well as the Scandinavian among the Esquimaux in Greenland ? Is it possible to assume that the inhabitants of the Department of the Lower Seine are of decided Kymric extraction, with perhaps an insignificant accession of German and Scandinavian blood, and that the different elements taken in from Southern Europe during the fifth century of Roman dominion, have not exercised the least influence upon the race, nor left behind the slightest vestige of an impress upon it ?

It is, on the contrary, of the highest probability, that the proportion of brunette individuals endowed with good teeth, sprung from the races of Southern Europe, as compared with the aborigines of the parts of modern France under discussion, is considerably greater than that of the Scandinavians in the Artic land as compared with the Esquimaux.—*L. Odontologie.*

THE RATIONAL THERAPEUTICS OF TYPHOID FEVER.

Koch's discovery has clearly established the dependence of typhoid upon the development within the alimentary canal of a specific bacillus. Murchison observes that typhoid fever is usually preceded by a gastro-enteric catarrh. Boyd, of Dublin, has recently maintained that a gastro-intestinal catarrh is the principal cause of typhoid fever by preparing conditions favorable to the development of the specific bacillus which, as is well known, is frequently found present in the water, in the soil, and in the human intestine, although producing apparently no interference with wealth.

The investigation of the Roux, Nouvard, and other bacteriologists have shown very clearly, as the writer believes, that the so-called bacillus is really but a modification of the bacillus coli communis, which is constantly present in great numbers in the human intestines. It seems to be only necessary that the bacillus coli should be subjected to an acute inflammatory process to be converted into a most malignant agent for the production of suppurating and septicæmic processes. Numerous cases have come under the writer's observation which seem to accord entirely with this theory respecting the predisposing influence of a gastro-intestinal catarrh, and the relation of the bacillus coli to typhoid fever. The most recent investigations show that the morbid process in typhoid fever, so far as Eberth's bacillus is concerned, is completed in about two weeks. At the end of this period, if convalescence is not established, the patient begins to suffer from a new set of morbific agencies ; namely, pus-producing microbes and the toxines produced by them.

In the light of the new knowledge afforded by bacteriological researches and the development of physiological chemistry, typhoid fever can no longer be regarded as a disease which is uncontrollable by treatment, and which must be left to run its course, under the expectant plan of management. No one nowadays thinks of allowing a patient with typhoid fever to go on day by day with a temperature four to six degrees above normal without employing other remedies than placebos to combat the morbid process. According to Dr. G. Thompson, of New York, the expectant plan showed a death rate ranging from 17 to 40 per cent., a result which certainly does not offer encouragement to the physican to settle into a state of innocuous deseutude in the presence of this malady.

The indications for therapeutic interference in this disease seem to be very clear, and may be briefly stated as follows : 1. To lessen heat production and increase elimination, at least during the first week or ten days of the disease; 2. To eliminate the toxines produced by the specific microbe upon which the disease depends for its characteristic features, and the toxines resulting from the development of the suppurative bacteria of various kinds in connection with the typoid bacillus; 3. To limit, so far as possible, the development of the invading microbes in the alimentary canal.

In meeting the first of these indications, Brand obtained excellent results from the use of the cold bath, reducing the mortality in a series of more than five thousand cases to 3.9 per cent. Bouchard has modified the method of Brand advantageously as follows : Instead of placing the patient in a cold bath, he is immersed in water at a temperature one or two degrees below that of the body. The temperature of the bath is reduced 1° every ten minutes until it reaches 86°, never lower. This keeps the patient in water at a temperature below that of the body for a considerable period without at any time producing the phenomena of reaction, and hence avoiding the augmentation of heat-production, which is the chief objection to Brand's method. A method which we have found advantageous, and which is perhaps as effective as any of those mentioned, is the application of sheets wrung out of hot water and wrapped about the patient. Sponging with hot water, the application of fomentations to the spine, and in cases in which the surface is cold, employment of hot blanket packs, are also measures which we have found advantageous. The effect of applications of this sort is at first to reduce heat-production as the result of the reflex action set up by the contact of warm or hot water with the surface of the body. The body is cooled by the greater amount of heat brought to the surface by the blood in the dilated blood vessels. By subsequent evaporation the surface is cooled, and thus heat elimination is further promoted. We thus have a decrease of heat production with a coincident increase of heat dissipation.

The second indication, which requires the elimination of the ptomaines and other toxic products of microbic action, is best met by the internal administration of water in large quantities, both by the mouth and the rectum. Our usual prescription is half a glass of water every hour by the mouth, and large enemas administered in such a way as to bring the water in contact with the whole colon two to four times daily. By this means the alimentary canal is emptied of germ-breeding material, and great quantities of microbes are carried off; at the same time the portal circulation is flooded, the action of the liver and kidneys is promoted, and the fever-producing toxines are both destroyed and eliminated.

The third indication is to be best met by means of an aseptic diet and the administration of aseptic or germicidal drugs. No one would think of administertng beef or flesh food in any form to a patient in the early stages of typhoid, and yet many practitioners are so inconsistent as to administer beef tea and beef juice in large quantities, while at the same time they withhold beef, mutton, and other forms of flesh food. They forget that beef juice or beef tea contains all the objectionable elements of flesh food, with little or none of the really nutritious and comparatively wholesome elements. Flesh-food is fever-breeding because it contains toxic substances, the product of tissue disintegration, excrementary materials on their way out of the system of the animal; and because it furnishes the most fertile kind of soil for the development of pathological microbes and their characteristic toxines and ptomaines. Eggs are thus declared objectionable on the same ground, and in our opinion, milk must also be regarded as not the most wholesome article of food for a typhoid fever patient. We say this while fully aware of the fact that its general use by physicians in typhoid fever will doubtless lead to a general dissent from the view expressed. Nevertheless, the readiness with which typhoid bacilli develop in milk, producing all its characteristics morphological features and its specific ptomaine, typho-toxine, very clearly suggests the propriety of substituting some nutrititious and more appropriate article of diet for typhiod fever patients. The principal reason, perhaps, why milk is recommended in these cases, and so generally used, is the ease with which it can be administered. But modern study of dietetics has shown very clearly that milk is by no means the most easily digested food for adults, and the bacteriological fact to which we have just called attention seems sufficient to condemn its use. Kumys is better than milk, on account of its being more easy of digestion and because it has less tendency to form gas in the intestines. We have found lactated milk still better.

In typhoid fever the system requires a considerable amount of carbo-hydrates to support the abnormal evolution of heat and consequent consumption of reserve tissue. It is true that milk contains this element in the form of fat, but we have also in the carbohydrates a source for a heat producing element which is easy of digestion and assimilation, and which does not furnish, as does the caseine of milk, a favorable soil for the development of the typhoid bacillus. Starch and sugar found in abundance in the various grain preparations, which can be easily taken by the invalid in the form of gruel, puree, granola, zwieback, and a variety of other forms. Some juices are also a valuable means of presenting nourishment in these cases; but it is not the purpose of this article to enter into the details of the dietetics of typhoid fever, and we will dismiss this part of the subject with one further observation; namely, that sugar and starch, the chief elements in farinaceous food, constitute the most convenient food from which the liver can obtain its supply of glycogen, which has been shown by the investigations of Bouchard and his pupils to be essential to the ptomaine-destroying functions of the liver, a function which it iso f the greatest importance to promote and support in typhoid fever as well as all other febrile infectious disorders. —*Bacteriological World.*

DEVELOPMENT OF MAMMALIAN DENTITION.

Dr. W. Leche begins an important essay with some criticisms and cautions in reference to some of the numerous recent publications on the dentition of Mammals. Some of these seem to him to be unduly rash. He indicates what is the safe method of investigation.

By means of continuous serial sections the author has for many years been accumulating facts in regard to the development of the teeth and the relations of the two dentitions. He begins with the hedgehog. The formula of its normally persistent dentition is—

$$\frac{i.\ 1,\ i.\ 2,\ d\ i.\ 3;\ \mathrm{C};\ d.\ p.\ m.\ 2,\ p.\ m.\ 3,\ p.\ m.\ 4,\ m.\ 1\text{–}3}{i.\ 2,\ d.\ i.\ 3;\ d.\ \mathrm{C};\qquad d.\ p.\ m.\ 3,\ p.\ m.\ 4,\ m.\ 1\text{–}3}.$$

The functional replacing teeth are—

$$\frac{i.\ 1,\ i.\ 2,\ C,\ p.\ m.\ 3,\ p.\ m.\ 4}{i.\ 2, \qquad\qquad p.\ m.\ 4};$$

the corresponding teeth which these have replaced would in ordinary terminology be called milk-teeth. But what is to be said of those teeth which persist without replacement, viz.—

$$\frac{d.\ i.\ 3,\quad d.\ p.\ m.\ 2,\ m.\ 1\text{–}3}{d.\ i.\ 3,\ d.\ C.,\ d.\ p.\ m.\ 3,\ m.\ 1\text{–}3}?$$

Morphologically these belong to the same series as the so-called milk-teeth. On at least some of them replacing teeth are represented by distinct, bud-like enamel-germs with corresponding mesodermic thickenings. The so-called molars develop from the enamel ridge in precisely the same manner as the preceding milk-teeth. The hedgehog has a complete milk-dentition, but the replacement is less perfect than in most Placentalia, thus what persists is partly due to the first set, partly to the second. But in connection with the third upper incisor (*d. i.* 3) and some others, there are hints or residues of a still earlier generation of teeth, so that what we call the first and second set should be called second and third. Nor is the possibiliy of development exhausted in forming what is called the second set, for there are hints of yet another. The dentition of certain fossil Erinaceidæ agrees with the first set rather than with the second.

Omitting what the author says in regard to shrew and cat, we shall notice his interpretation of the marsupial dentition. He confirms some of Kükenthal's work. The second set of teeth is represented by bud-like enamel-germs, partially surrounded by thickened connective tissue, which at a certain stage are associated with all the teeth in front of the third molar. But of these germs only one, the third premolar, develops into a functional tooth. All the persistent teeth of marsupials, except the third premolar, correspond to those of the first set in Placentals. Reasons are given for believing that a complete second set never existed in Marsupials.

In connection with Edentata, it is noted that in embryos of *Tatusia peba* there are rudiments of more teeth than do subsequently become calcified. The dentition of Dasypodidæ is not strictly homodont; only the first and eighth tooth are simple cones, those intervening (in the first set) have a median tubercle and a lower lateral one. In regard to Cetacea, the author states that the persistent dentition of toothed whales (all ?) corresponds to the first set in other Placentals.

The teeth of the second set (replacing teeth) are not descendents of those of the first set (milk teeth), but develop lingual-wards to these direct from the enamel ridge. Reasons are given showing that the first set may be regarded as ontogenetically and phylogenetically the older. Four stages of dentition may be established:—

(1) The persisting dentition consists wholly of the first set (Odontoceti).

(2) The persisting dentition consists of the first set excepting the third premolar (Marsupials).

(3) The persisting dentition consists of molars of the first set, while incisors, canines, and premolars are partly of the first and partly of the second set (Hedgehog).

(4) The persisting dentition consists, excepting the molars, only of the elements of the second set (higher Mammals).

There are wo kinds of "monophyodontism" in Mammals. In the lower forms it is due to a non-appearance of the second set; in the higher forms it is due to a suppression of the first set. In higher Mammals the monophyodont state is always the result of regression, but this is not the case in Marsupials at least. It seems likely that the second set has been gradually acquired by the Mammals. Prof. Leche closes with a discussion of the differentiation of the various types of dentition. His detailed memoir will be looked for with expectation.—*Journal of the Royal Micro. Society.*

"PROCEEDINGS" IN PARTS.

The publication of the Proceedings in parts, begun last year, admits of progressive change with more immediate benefit to the members than was possible under the old form. The income of the Society, while but little in excess of the amount required heretofore, will still allow of some addition to its pages, and the amount of such increase would of course have to be strictly limited by our income. Should we be able to produce a journal that commanded more readers our income would increase. In this connection it is of interest to see what other societies have done: The American Chemical, Geographical, and Geological Societies, all recently organized, require five dollars a year. All publish periodicals. The Chemical Society is composed of a species of federation of local societies. The Geographical Society publishes its papers when they are ready.

The Royal Microscopical Society of London was founded in 1839, incorporated in 1866; meets monthly—October to June; annual subscription, $10.50; has 650 members (ordinary), and publishes the most elaborate summary of current researches that can be obtained.

It is understood that this journal was raised to its present condition by the liberality of one of the members of the Society, and that it is not yet a settled question if it han be sustained.

The Royal Society of London is the oldest scientific society in Europe, except in Italy. It has 522 ordinary members—fees, $15 annually—and publishes two distinct series of works.

The Royal Society of Edinburgh, founded in 1787, has an entrance fee of $10.50: annual fees for ten years, $16; then for fifteen teen years, $10.50; and members for this period are then members for life without further dues. This society gives two biennial and one triennial prize and publishes transactions and proceedings.

Besides the above prominent societies there are numerous other local scientific societies and clubs in Great Britain which are less expensive.

It is a question which experience only can answer as to the best microscopic publication our Society can furnish. The interest in science in this country is undoubtedly increasing, but it was the remark of a member that the *Lens* (1872) was too good for our market. Would it be so now? The Society has the advantage over private enterprises in that its energies, if carefully organized, will be far more effective than the work of any single individual can possibly be. Should we be successful in establishing the character of our publication as giving a faithful summary of American work, it would acquire a character and importance never before possessed by any journal in this country—a character which can only be acquired by the publications of a permanant and national society.

The above statements might be still further extended, but those interested might find additional material in the essay of W. J. McGee on the "Evolution of Scientific Periodicals," in the Proceedings of the Washington Philosophical Society, in which the tendency of societies to publish serials in place of annual volumes is clearly established.—*American Microscopical Society.*

OBSERVATIONS ON CELLULAR ELEMENTS OF THE PULP.

Mr. H. Hopewell Smith said it was his desire to bring before the meeting the result of several years' work in investigating and studying the morphology and physiological properties of the cellular elements of the dental pulp. His statements, he trusted, would be more argumentative than dictatorial, more suggestive than dogmatic. Of all the structures noticed on the microscopic examination of the tooth, the greatest interest centered in the pulp, for it contained elements which differed markedly from any other in dentine, enamel, cementum, or periosteum. Each mite of fresh information made up a larger knowledge and contributed to a complete science. Cursory examination showed that two kinds of cells stood out clearly distinct from each other, the peripheral prominent layer of cells, the so-called odontoblasts, and the central smaller less defined pulp cells.

CELLS OF THE MEMBRANA EBORIS—HISTOLOGY.

All along the periphery of a section of the pulp, arranged like a palisade in a single row, was a layer of large, columnar, epitheloid cells. The layer was most marked at the coronal portion of the pulp, because appreciably less distinct at the cervical portion, while in the region of the root it was practicably invisible. The membrana eboris was composed of cells, the so-called odontoblasts. An odontoblast generally speaking was a large multipolar, nucleated, epitheloid cell, more or less columnar in shape. It varied considerably in the same specimen, and ranged from that of a thin cord with bulbar terminations, to that of a pear or banana. Many cells were carrot shaped, many caudate. They varied also in other respects. Cells in the same section differed much in conformation. Where the pulp was constructed or flattened laterally, there the odontoblasts were thick and short ; in the place where the pulp was broadest, however, they were long and thin. In teeth having cylindrical pulp cavities, the diversity in shape of the cells was hardly appreciable. Pathological conditions, such as inflammation of the pulp, abscess and calcific degenerations did not seem to affect the shape of the odontoblasts at first. With regard to size, odontoblasts varied very considerably, the coronal cells being larger and more marked than the radical cells of the pulp. The change in size corresponded to the length and width of the tubules, with which they were closely associated.

RELATIONSHIPS TO SURROUNDING STRUCTURES.

He had, in a paper written in 1889, shown that the cells were not packed closely together, but were separated by wide visible spaces, which were, in certain cases filled with a homogeneous substance, and small, round, and angular cells. That was the case in developmental pulps, there being an absence of inter-cellular tissue in most adult specimens ; and there were visible in many instances, fine delicate fibrils stretching into the dentine between the odontoblasts, in addition to the already mentioned structures. So far as his observation went those fibres were not nerves, but form what might be termed the "supporting fibres" of the pulp. The long axes of the odontoblasts were approximately in the same direction as that of the tubules. In structure they possessed a fine degree of granularity, which did not disappear on the addition of a weak acid, and was unaffected by glycerine and certain other chemical agents. Their nuclei were large and prominent. It was believed that there was no limiting membrane. The cells were remarkable for their polar offshoots, which may be classified as central or basal, peripheral or dentinal, and medium or inter-cellular. The first-named were most easily observed in sections prepared by Weil's or decalcifying processses, but the latter required, as Mr. Mummery had suggested, a special method of staining with iron and tannic acid. There was a marked analogy existing between the odontoblasts and certain epitheloid cells found in the olfactory region of man and animals, in the ganglionic layer of the retina, and the auditory cells of the macula lutea of the membranous labyrinth. Their processes were similar, their structure identical, their shape only modified by the mutual opposition of neighboring cells.

THEIR PHYSIOLOGY.

The question relative to the functions and uses of the odontoblasts were deep and intricate. Their small size, delicate nature, and inaccessibility has rendered microscopic investigations difficult, and many theories as to their properties had been presented. Various opinions had been entertained by Mr. Tomes, Magitot, Kolliker, Klein, Heitzman, and Bodecker. The axiom that dentinal fibrils were sensation conductors was well known to all. Inasmuch then as they were regarded functionally in the light of nerves, and as they represent the peripheral poles of the odontoblasts, and were in fact part of those cells, it followed that the latter must be concerned in the act of conveying extrinsic stimuli to the nerves of the pulp. An odontoblast was more of the sensation transmitter than a sensation generator. It was believed to be a means of communication between fibril and nerve endings, passing on sensory impulses and warning the pulp of incoming dangers. To prove that it was necessary to show that odontoblasts did not form dentine, and that they were the end organs of the nerve filaments of the pulp.

NEGATIVE EVIDENCES.

The arguments to disprove the dentine forming theory were many and powerful. They were as follows: No observer had ever seen a semi-calcified odontoblast, or recorded the observation of one secreting a calcreous material. The same cell could not take on two totally different functions simultaneously. There must be a separate cell for the formation of fibril and matrix. The presence of spaces between odontoblasts would lead one to expect to find like spaces in dentine. but that was not so. As fibrils and their sheaths were known to cross interglobular spaces, and as the latter are considered to be an arrest of dentinal development, one would expect that if the fibrils were formed by the same agents as those which produced matrix, they themselves (fibrils) would be absent, and that was not so Again in the semi-cacified matrix observed in the developmental pulps, fibrils were seen most clearly to stretch across the intervening zone, and there was a distinct mark of demarcation between them, and the homogenous substance through which they extended. The granularity of the cells was unaffected by dilute acids or chemical reagents ; thus it would seem that calcium salts entered but little into their composition. After decalcification in formic acid, the matrix might be torn into laminæ, which ran parallel to the surface of the pulp cavity, whereas they would run at right angles to the surface if odontoblats formed matrix. The dissimilarity in the shapes and sizes of the cells was against the acceptance of that view ; that dissimilarity would be inexplicable if they formed dentine. The fact that secondary dentine nodules in the pulp were formed by small round cells and that odontoblasts took no part in that work, was clearly seen when sections of pulp containing calcerous degeneration were cut *in situ* After a cell had ceased its functions, it atrophied and disappeared. Odontoblasts, however, persisted long after all dentine matrix had been completed. In some sections of the root, with pulp *in situ* here and there odontoblasts were absent. It was remarkable that in those situations their corresponding tubules were wanting. Finally, there was to be added Mr. Underwood's statements that the distinction between fibril and matrix was not only one of a degree of calcification.

POSITIVE EVIDENCES.

Odontoblasts, as far as was known, were derived from the stomodœal mesoblast, *i. e.*, they were formed on the edge of the upgrowing papilla of the dentine organ. If it could be proved that they arose from epiblast, one great difficulty would be removed, for it would be quite easy to affirm that they were nerve endings or end bulbs, and their analogy to the cells at the terminations of the optic and auditory nerves would be more striking, not only with regard to their morphology, but also their physiology. Most authorities agreed that the nervous system was produced primarily by the epiblastic layer of the blastoderm. Accepting those statements the conclusion was that the odontoblasts could not be from a developmental point of view, ganglion cells in which sensory or tactile on trophic impulses arose *de novo.* But it was no argument against the idea that they served as sensation transmitters. It was a difficult matter to believe that odontoblasts served merely as factors in the production and keeping up the nutrition and vitality of dentine. There were a number of reasons for supposing that the odontoblasts were more intimately connected with the nervous system than had hitherto been supposed, and they must be the actual end organs or dental ganglia of the pulp. The corollary was that the term odontoblast was a misnomer.

CELLS ON THE PULP PROPER.

The central cells of the pulp varied in size and shape during the various stages of the growth of the pulp. In developing teeth they were large cells, having rounded, angular or spindle-shaped outlines. In short, they partook of the nature of embryonic cells generally. There nuclei were large, prominent and granular, and contained no nucleoi. Near the superficial portion of the tooth they were very loosely held in the meshes of the fine connective stroma, and there were more spindle cells to be seen. In adult teeth the pulp cells were chiefly stellate or angular in shape, but cells of any description were comparatively few. A few insignificant odontoblasts were firm, but the mass of the pulp seemed composed of bundles of thick and thin connective tissue fibres, separated at the periphery by large vacuoles. If transverse section through cervical and radical parts of the pulp were examined, a great difference of structure would be noticed, with regard to the fine connective tissue fibres spoken of, it was probable they served not only a stroma in which cells were imbedded, but as a supporting framework to sling up the soft delicate pulp. The functions of the spindle cells was probably a generative one, to produce new odontoblasts in places where the old cells had been modified by the advancing line of freshly deposited dentine.

AN ENGLISHMAN ON THE CONGRESS.

Some members of the Odontological Society of Great Britain may be interested in the following comments on three items which, we have reason to believe, figured in the discussion of the World's Congress Auxillary circular, and led to the rescinding of the resolution of a previous meeting at which delegates had been appointed to the Congress. Firstly, as to what we may briefly characterise as the erroneous statements of America being the birthplace and home of scientific dentistry, I made enquiries in many directions ; but found that very few had ever seen the circular in question, and not a single one of those who had perused this wretched and unfortunate publication, but condemned the objectionable passages in the strongest terms. Secondly, apprehension was expressed as to the two public meetings which were arranged to be held in conformity with the general rules appertaining to all the congresses. It is true the public were admitted to the gallery during the general meetings, but were absolutely excluded from the Sectional Meetings and the Clinics. As a matter of fact, the attendance in the gallery was of the very scantiest, and consisted mainly of the relations and friends of dentists and a few dental students. Indeed, I scarcely think that the Dental Executive quite carried out the intentions of the Congress Auxillary Executive. I certainly anticipated that the two popular evening meetings would have been devoted to the treatment and discussion of some features of dentistry from the standpoint of public interest, such as a lantern lecture on dental hygiene, or a discussion under the superintendence of the committee on the care of the teeth of the poor. As a matter of fact, neither of the evening general meetings, though well attended by the members of Congress, were in any sense popular; but were devoted to lantern exhibits illustrating purely professional subjects which were treated in a way worthy of of the Odontological Society itself. Thirdly, with regard to the Woman's Branch, "The officials of the World's Columbian Dental Congress have shown the most favorable disposition towards women dentists, but the women themselves have been slow to respond," as mentioned by the recording secretary in her report to the meeting of the Woman's Dental Association of the United States, held during the progress of the Congress. As far as I could gather, about twenty to twenty-five women dentists attended the Congress, all of whom were members of recognized dental societies, with the exception of three foreign representatives. They contributed some papers of no uncommon interest in several sections, including one on "Mercuric Chloride as a Germicide," which showed a familiarity with the operations of bacterological research as yet possessed by few dentists.

It is curious how such an episode as this unfortunate circular may warp one's common sense, culminating in attributing ulterior motives to even commonplace incidents. It seems that the official letter from the Odontological Society of Great Britain was returned from America unopened. Some of my friends, more or less touched with Americaphobia, seemed to think that this was a part of the wily tactics of the Congress Executive, and asked me if I could give any explanation of the fact. I confidently expressed the opinion that it was a matter entirely connected with the postal service. I therefore naturally took an early opportunity of ascertaining the true history of the returned letter. The letter was addressed to the President of the World's Columbian Dental Congress at Chicago. No such person was known, or could be found, by the postal authorities; and therefore, after a time, as is usual in such cases, the letter was returned to the sender. It was then redispatched to America, but this time addressed to the president personally, at his home address in Boston, where, of course, it duly raached him, but only a few days before the beginning of the Congress. I know that it was a matter of great regret to him, firstly, that the letter had miscarried; and secondly, that in the midst of pressure of work he had not had the opportunity of sending an official reply before the Congress.

Now to return to our "moutons," no disrespect meant, most of our friends were busily engaged on executive work or in connection with the meetings of the National Association of Dental Faculties and the National Association of Dental Examiners, which were being held antecedent to the Congress. These two bodies are doing extremely good and useful work, especially in standardising the dental education in the different States. Their existence is a practical recognition that leaving the control of higher professional education to bodies with naturally diversified State laws is bad, and that such matters are of federal, or as we should say, imperial concern. It is indeed a matter on which we may congratulate ourselves that there is no necessity for analogous bodies in this country, owing to the absosute identity of the dental laws in the several parts of the United Kingdom, and the practical uniformity of the dental curriculum in all our dental educational institutions. It might, however, be worth while to consider the advisability of an occasional conference of the executive or delegates from our different dental schools to discuss how far and in what respects, the present curriculum, framed many years ago, might be improved.

The following quotation from the proceedings of the latter of these two bodies as to the number of students during the Session 1892-93 is a striking contrast to the number of students recently attending our own schools, which is so small as to give rise to the very serious question whether the increase in the number of students is proportionate to requirements of the community. "Session 1892-93, number of students in recognized schools: Freshmen, 1,429; Juniors, 927; Seniors, 433; Graduates, 320; Post-Graduates, 44 (one school not reported). Total, 3,153. In unrecognized schools the number of students was: Freshmen, 111; Juniors, 54; Seniors, 22; Graduates, 20." Nor does this statement quite exhaust the actual number of students, for there are probably many studying with private practitioners, who might fairly be ranked as students, especially for the purposes of comparison with the number studying in this country; since, it must be remembered, that in the United States it is still possible for a student to become a legally qualified practitioner without necessarily passing a dental college. In this respect British legislation is much in advance of even the best State legislation in the United States, since it is impossible for any student of dentistry to become a legally qualified proctitioner without (1) passing a preliminary examination in arts similar to that required of medical students; (2) four years spent in professional education, which includes three years practical instruction in mechanical dentistry under a registered dental practitioner, or under the direction of the superintendent of the mechanical department of a recognized dental hospital, and two years devoted to lectures and practical work, attendance being obligatory both at a medical and a dental school, before he can enter for the qualifying examination which is always conducted by one of the licensing corporations having no connnection with the teaching bodies.

We had plenty of opportunity of comparing notes on this and other matters with the various practitioners who were now beginning to throng the reception-rooms of the Columbian Dental Club. Our acquaintance with the American practitioners was simply increasing by leaps and bounds. The weather was hot enough to make us revel in the cooling lager, or enjoy the soothing effects of a cigar, seated in the shade, surrounded by good fellows who betrayed not the slightest trace of animosity, even in discussing our international dental differences. Yes, the Columbian Dental Club was indeed a great institution. It was very conveniently and centrally situated, and became the general headquarters of every dentist who visited Chicago, and at times, even its large rooms were thronged to almost overcrowding. From early morn, one might almost say, to early morn, the Chicago dentists thus kept open house to one and all. It was not a palace like the Union League Club or the Chicago Athletic; it was not luxuriously furnished, but it was spacious, comfortably equipped, and served its temporary purpose so well that many will regret that it could not become a permanent institution. Not the least best remembered feature of the Congress to most visitors will be the pleasant days and nights spent in or around and about the Columbian Dental Club, nor will they readily forget the valuable and innumerable services of the omnipresent managerial Brophy, nor those of his colored henchman, "the Commodore."

You, Mr. Editor, have well remarked that "there is the social side of a meeting, under its soothing influence, begotten largely of better knowledge, angularities get rounded off, annoyances allayed, and mutual appreciation heightened." The Club contributed enormously to the development of the social side of the Congress, far more, indeed, than any amount of separate receptions and more or less formal entertainments could have done. It is to be hoped, therefore, that it is but the forerunner of a similar institution at the next dental congress, wherever that may be. Paris, 1900? Well, perhaps, but why not before? Many a time during this professional holiday, both Americans and foreigners have spontaneously remarked that the next dental congress should be in England, and why not? I frankly admit that I discouraged any such anticipations, mainly because so many British dentists regard an independent dental congress as inimical to the dental section of the International Medical Congress. Is not our policy in this regard rather contradictory, not to say inconsistent; since it is a well known fact that as a profession we have discouraged, nay prevented, the formation of a dental section of the British Medical Association, because that would interfere with the prosperity of our independent Dental Association and its independent Annual General Meeting? As a lover of all good things, I am an advocate for both, and see no reason why we should not hold from time to time independent international congresses, such as are now held by many sections and specialties of the medical profession, while according our fullest support to all international congresses where dentistry is concerned, or is capable of playing an important part, such as the International Medical Congress or that of Hygiene and Demography.—CUNNINGHAM (G), *Record.*

ETIOLOGY OF PYORRHŒA ALVEOLARIS.

At the regular meeting of the New York Odontological Society, held November 21, 1893, Prof. C. N. Pierce, of Philadelphia, read a paper on the "Etiology of Pyorrhœa Alveolaris," in which he stated that, in the effort to reduce this disease to its simplest factors and determine the primary origin of each, he should coin two terms, which he thought would be more expressive as to the true nature of the disease. He believed that in one form of calcic pericementitis the origin of the salt was the saliva, and in the other form the blood; the former he therefore designated as ptyalo-genic, calcic pericementitis, expressing the idea that in its origin it is local, peripheral, and salivary; the latter he designated as hæmato-genic calcic pericementitis, expressive of the idea that in its origin it is constitutional, central, and associated with some modification of the normal composite of the blood-plasma. This latter he believed was the condition in true pyorrhœa. In this he suggested that possibly some chemical agent derived from the blood, the product of some morbid constitutional state, might be the exciting cause. With the view of testing the plausibility of this assumption, he had the deposit removed from the apical extremities of teeth which had been sacrificed by this so-called pyorrhœa, and subjected to chemical analysis. In every instance the chemical methods employed revealed the fact that the deposit was a combination of calcic urate, sodic urate, with some calcic phosphate and carbonate. *The existence of the urates, in which the uric acid is the predominating element, shows that this deposit is a precipitate from the blood exudation and the irritation of constitutional origin*, the disease, if these analyses are confirmed by subsequent experiments, being but another phase of the uric acid or gouty diathesis. These deposits were examined by Professor Ernest Congdon, of the Drexel Institute, whose experimental skill is a sufficient guarantee for the accuracy of the results obtained, and subsequently repeated by Professor A. P. Brubaker with the same results.—*International.*

PYORRHEA ALVEOLARIS IN DOMESTICATED ANIMALS (PANTHER, KANGAROO, DOG, APE)—THE LATE DR. TINKER—ANTI-CHOLERA PLANT.

[ABSTRACTED BY OUR TRANSLATOR EXPRESSLY FOR THE ODONTOGRAPAIC JOURNAL.]

The *Joumal des Connaissances médicales* has been giving some observations by Dr. Galippe, on pyorrhea alveolaris in various domesticated animals. In the cranium of a panther, prepared for a collection, he found various lesions of the teeth and alveolar borders, with erosions, of the cementum principally, and destruction of the alveolar border to the level of the canines. Micro-organisms had penetrated far into the dentine, the condition differing from that usually seen in caries, in that a less number of canaliculi were invaded, but more deeply, and without their diameter being notably augmented, this being the case even nearest the surface where the number of canaliculi infected was greater. The same lesions were found at the level of the osseous cementum, and still deeper, near the apex of the root, a considerable number of neoformations. The cavities were filled in some places by cement tissue of new formation, in others by true osseous tissue from outside the root, appearing to belong to the alveolar border. There had been an evident union, during the life of the animal, between the apex of the root and the maxillary, the consequence of a neoformative osteitis. The number of fibres of Scharpey, deeply penetrating the cementum, was very considerable, and this fact harmonized with the solidity of the attachments. the same abundance of means of fixity being characteristic of the molars and tusks of the elephant.

The pulp cavity was criss-crossed by dentinal neoformations, differing from true dentine in the irregularity of direction of the canaliculi, their variable diameter and numerical proportion ; they color less readily with picro-carmin, and have many small lacunæ.

The next observation was upon a kangaroo which had succumbed, together with several others, to an affection of which the direct cause was unknown. In this case the same phenomena of destruction and reoformation were observed, and the maxillary as well was deeply eroded. Bunches of leptothrix and of microbes were present, and in the medullary tissue little abcess centers appearing stuffed with microbes. The bloodvessels were filled with and obliterated by white globules. Myeloplaxes were in the osseous canals, in the cavities, as in rarefying osteitis ; a mixture of lesions belonging to acute and chronic inflamation. It was evident, from the number of abcessses in the ligament and in the maxillary, often near the nerves, why the animal had refused to eat, the intestine at the autopsy having been found absolutely empty.

Two voluminous abcesses containing masses of leptothrix and microbes, were found in the ligament and between the two roots of a molar, the neighboring tissue being infiltrated with white globules. Between these abcesses was a cavity reinvested with epithelium with prolongations of the same. Above the conjunctive tissue tended to dispose itself in partitions, all recalling cysts formed at the root apex of carious teeth. Some of the roots had entirely disappeared, the dentine of the crown being deeply eroded. Secondary dentine was in the root canals and the pulp cavities, and in some lymph cells.

Dogs are much subject to this disease, especially house dogs, and it is hard to find the teeth they have dropped. A lower incisor showed great destruction of the cementum with no attempt at reparation, the pulp cavity nearly filled with a concretion of pus, in certain points the pulp destroyed and replaced by coagulated albuminoid matter. The root canal was partly obliterated by secondary dentine. The root was overlaid with irregular masses of tartar, and the notches eroded in the cement were filled with microbes and their debris.

It appears that the canines of apes are sawed off, because these animals become cross and bite when they get old. The operator, nervously looking out for his own safety, is not very careful about the cutting, and the pulp cavity is often laid bare, becomes inflamed and infected, and the resulting abcesses are precisely like those in man under like conditions. The teeth subjected to this barbarous treatment, presented like phenomena,—micro-organisms in the pulp, the canaliculi, and lacunæ, in great numbers ; hypertrophy of the cementum near the root apex.

Our Spanish contemporary, *La Odontologia*, devotes considerable space to eulogizing the late Dr. William Tinker, who is stated to have had a remarkable career, having been born "in North America," educated in Germany, elevated to a judicial position in Louisiana and a Colonel's rank in the United States army ; we are told that he then studied dentistry, practiced successively in New York and other North American towns, in France, Germany, Buenos Ayres, and twelve years in Cuba, where he earned thirty and forty thousand dollars per annum at his profession ; in Mexico, Pueblo and Vera Cruz; and finally established himself permanently in Madrid, where he lived luxuriously on twenty-six thousand a year, and entertained the most distinguished people of that aristocratic city. Yet he had to die, and left no fortune. "Poor Tinker," exclaims the writer, which remark seems singularly appropriate under the circumstances.

The same journal says that the eminent Charcot left memoirs which some enterprising editors would give millions of francs to get hold of for publication, but it was his injunction that they were not to see the light for a very long time. It is said that they consist wholly of minute psycho-physiological observations which would be recognized by all the world as pertaining to the cases of crown heads and other great personages still living or too recently dead.

The Russians affirm that they have the strongest circumstantial evidence, almost amounting to proof positive, of the discovery of a remedy for cholera. It is not to be treated with microbes, virus or inoculation, but by a plant indigenous to Asia, the cradle of cholera. A commission of physicians and naturalists has left St. Petersburg for Central Asia with the object of studying *Ferula gumbel*, as it is called, on its native soil. It grows abundantly in Turkestan.—*La Odontologia.*

THE

ODONTOGRAPHIC JOURNAL.

CONDUCTOR'S DEPARTMENT.

"BLEEDING KANSAS."

Kansas has much to answer for politically, having gone wrong on numerous and varied questions of that nature, but until recently had escaped many of the ills visited upon the people and profession of several other states through the granting of certain rights and privileges to alleged educators and educational institutions. The "Kansas City Dental College" is a reputable and recognized institution, presided over and operated by men of attainments, both scientific and professional, and there has never been a question as to its claim to the place it holds in American dentistry. Of late, however, events have drawn it into unenviable notice through the granting by the legislature of a charter to some person or persons of the same city, calling himself or themselves, as the case may be, the "Kansas City College of Dental Surgery," a name sufficiently close in style and sound to easily lead the uninformed to think them one and the same institution. Indeed, much of the mail intended for the latter goes to the Kansas City Dental College, and it was this fact that roused this school to a full knowledge of what was going on, and determined them to turn the other down if that were a possible thing. This, according to the *Western*, will be done, or at least a vigorous attempt made in that direction when the facts can be brought to legislative attention.

The character of this "institution" may be judged from the following from its "special announcement," which was mailed, English and all, where it was thought the offer would be appreciated and prove effective:

> Few of the dentists that were in practice twenty or thirty years ago have diplomas. The reason is they can't spend 12 or 18 months away from practice, and as all our colleges allow a young man with-

out any knowledge of dentistry the same chance as a practitioner of 30 years. This is, we believe, all wrong, and we will allow any dentist in practice,

8 years one course off,
15 " two " "

In any case we will not ask the practitioner to attend only so much of each term as we may deem necessary, leaving him free to attend to his practice.

We will not graduate a young man that has no practice knowledge of dentistry, though he may pass an examination, while we will overlook errors in examination where the party is efficient in practice. Therefore a diploma from our college is more valuable than from any other western college.

The collegiate course is a graded one of three terms of five months each ; but any one proving him or herself sufficiently competent and to the entire satisfaction of the faculty, may take advanced standing.

Just why the limit should be placed at 15 years it is not easy to see, unless for looks' sake. But, perhaps this is amply provided for by the conditions named in the last paragraph, compliance with which helps one to " advanced standing." This might enable one to graduate the day he matriculated, provided always that the matriculant prove " him or herself sufficiently competent and to the entire satisfaction of the faculty ! "

Now for a little matter that concerns this journal in particular, Under date of November 4, 1893, we received the following, which we print in full for whatever it may be worth :

In the October issue of the "Western Dental Journal," which is published in this city and Memphis, Tenn., is contained an editoral under the caption "A Dental Diploma Mill in Kansas City," and which is made to apply to us, the "Kansas City College of Dental Surgery." Said article concludes with a request to every dental publication in the land to copy the same.

The purpose of this communication is to brand the editorial referred to as libelous and absolutely false, and at the same time to warn you from reproducing the same [the reader will find it on another page] in your journal. Enclosed find our special announcement of faculty curriculum, showing that we are prepared to do what we profess. Respectfully,

T. J. Atkinson, Sec'y.

N. B.—Will you give us price of one-half or page of space in your journal each month. T. J. A.

On this letter of warning we have but two comments to make : First, the advertising pages of this journal are open only to reputable and recognized schools ; and second, while we enter no particular objection to being warned, we draw the line at being " held up," and especially by the proprietor of a rag mill.

DENTAL COMMISSIONERS OF CONNECTICUT.

Drs. Civilion Fones, President; Geo. L. Parmele, Recorder; Wm. J. Rider, Chas. P. Graham, Richard W. Browne.

SOCIETIES AND SCHOOLS.

The New York Dental School (for men and women) has issued its first announcement. The location is 4th Avenue and 22d Street.

The Third district society of this State, held its 25th annual meeting and silver anniversary at Albany, in April last, and the outcome of that event is before us in the form of a pamphlet of essays historical, scientific, technical, jubelant, etc.

If the program was fully carried out December 18th, the Central Dental Association of New Jersey had a great time. Dr. Faught read on "Diet;" Dr. Barlow demonstrated his method of using Speyer's cohesion plates; the White Company exhibited new new electrical appliances; Dr. Whittmann, the Stanborough right angle hand-piece, and Dr. Evens of the house of McKesson & Robbins, talked on pyrozone. Mention of "dinner to music" should not be omitted.

The Eight district society (N. Y.) held its December meeting with Dr. H. J. Burkhart, Batavia. The Buffalo contingent turned out in force, and other points—Warsaw, Rochester, etc., had their representatives. Dinner was served at the Batavia Club and the meeting was held in the same building. Dr. Stainton, Buffalo, was essayist of the evening discussing "Anesthesia." A note from one who was there says: "The Buffalos went home on the midnight train, but Blank and Blank couldn't get away till morning, not, however, on account of any physical disability."

The Sixth, Seventh and Eighth Societies (N. Y.) held a union meeting at Rochester the last day of October and day following, and members and guests had a most profitable and enjoyable time. Papers were read and discussed, demonstrations given, materials displayed, and to that number that every moment of the time was fully occupied Dr. Burkhart, Dansville, president of the Seventh, and Dr. Howell, chairman of the business committee, engineered the entire affair to a successful close. Nothing more satisfactory in the way of a banquet has ever been given in this district. The speakers were representative men and did the municipality, the church, the law, medicine and dentistry great credit. The notion of dropping this feature of the union meetings was seriously entertained a few years ago, but the man who would suggest such a thing now would be drummed out of camp.

PELLETS.

Special attention is called to the articles on Pyorrhœa. Prof. Pierce's new terms stand for things that exist objectively.

The man who never uses amalgam will find food for insomina in Dr. Martin's Berlin letter elsewhere in this issue. Filling cavities in teeth with amalgam may be bad enough ; but cavities in bones, and with *copper* amalgam at that ! Think of it !

The *Practitioner* said some very plain things about the Canadian end of the profession, and the *Dominion* talked back ; but before the former could " get at 'im " the *D* said it hand't understood the matter that way, hence our record of the " meet " of these knights of the sword-like quill—D ! † × + ? : , ? d !—goes back to the case.

The medicial journals are still grinding Mr. Ernest Hart, the English medical editor who lately took it upon himself when in this country to tutor the profession in the matter of codes. Tutoring is bad business when the funtion is self-assumed and the matter and manner respectively effete and offensive.

1st. American.—" I see Sir Blankety Blank, A. M., M. D., Ph. D., F. R. C. S. L., K. C. B., K. H. S., is in town to-day."

2d. American.—" Are you certain that none of it got away ? "

1st. American.—" Now that I think of it something did,—the A. S. S., so long worn by Pangloss, who as you know was born and brought up in Milk Alley."

The Pacific Coast Dentist " wipes " the " Kansas City College of Dental Surgery " in very good style in its issue for October. The editor may now wish he hadn't done it ; for the warning of its chief " Prof." is abroad and something dreadful is going to happen to editors and publishers who respectively say or permit to be said anything false and libelous against this latest addition to dental educational " institooshuns."

Prof. E. T. Darby is quoted on tin foil as a filling material, mentioning a built up molar that had on more than one occasion suggested cast rather than welded metal. Years ago we saw a specimen of this description in the Museum of the old Pennsylvania, and it is just possible that this was the one referred to. It struck us as a remarkable product of patience and skill, with a material that should come more to the front.

The reader is advised to take exception to at least one of the multitudinous " dont's " on another page. " Don't use ready-made gold crowns, you cannot properly adjust them to the roots, the adjoining teeth, or the occlusion." Our advice is to use them in every case where a gold crown is admssable, reserving the home-made article for the occasional root that the ready-made crown cannot as readily be made to fit. This kind of crown is of a fine quality of gold. sufficiently soft to be easily adapted to the root., has style about it, and when properly set has the appearance of a work of art, color always excepted. They adjust and occude to perfection.

Some of our readers will be surprised at the relations as to fees existing between dentists and medical men in England, as set forth in one of our articles from the *Cosmos*. The editor is right when he says it is the rule here for each to charge the other the same fees required of patients of other vocations. And this is as it should be. No self-respecting man cares to keep himself under lasting obligations to another for services usually reckoned in dollars and cents. It smacks too much of charity which, while it should begin at home, should also, when possible, be self-inflicted. Pay, pay in full, pay promptly, requiring the same at the hands of others.

In this same article an alleged medical gentlemen who got something for nothing, delivers himself of the following : "Dentistry is for the most part a mechanical craft, that should be carried out, when necessary, under the supervision of a medical man." We suppose this gentleman would like nothing better than to look wise, and take the fee,—while his superior performed the operation. Imagine the fool patient submitting to this owlish supervision on the part of a man versed only in the truly mysterious ! Some of these days this gentlemen and his ilk will take it into their heads to have law practiced and gospel preached "under the supervision of a medical man." Then he might work into politics, and a little later into the position of boss of the street gang, whose work also should be done "under the supervision," etc., of this kind of medical man, of which the most honorable of professions would gladly rid itself. There are somethings in this world that seem specially designed to make one sick. This is one of them.

A great contour filling dropped on his plate and straightway he sought his jeweller, from whom he exacted in exchange a certain pin of decorative mein. Nor did he forget the Muse who, by the way, happened on this particular occasion to be a little "off."

This dirk was in my teeth ; of old
Not in this form, but gold.
It failed its duty well to do ;
I hope 'twill better work for you.

If it should faithful prove and good,
And not drop out upon the road,
For its loss to me I'll be resigned
Though I have molars on my mind.

L'ENVOI.

I'll ask the dentist for more metal
And tell him in ten years I'll settle !

BOOKS.

Dr. Hipple, now of Omaha, favors us with a copy of "The Medical Aspect of Diseased Teeth."

CARE OF CHILDREN'S TEETH. Letters from a mother to a mother. By "Mrs. M. W. J." Philadelphia: Willmington Dental Mfg. Co. Pp. 114.

THE RISE, FALL AND REVIVAL OF DENTAL PROSTHESIS. By B. J. Cigrand, B. S., D. D. S. Second edition, revised and enlarged. Chicago: Periodical Publishing Co. Pp. 316.

P. Blakiston, Son & Co., announce the sixth editor of *Holden's Dissector*, revised by Dr. A. Hewson. Notwithstanding the addition of about one hundred new illustrations, the price has been materially reduced.

DISEASES AND INJURIES OF THE TEETH, INCLUDING PATHOLOGY AND TREATMENT. By Merton Small, M. R. C. S., etc., and J. F. Colyer, L. R. C. P., etc. London: Longman, Green & Co.; Rochester: Scrantom & Wetmore. Pp. 423.

The *Observer* for 1894 will be greatly enlarged and improved, but without any increase in cost to subscribers. It will be divided into these departments,—the Outdoor world, the Agassiz association, and Microcopy, headed respectively by Messrs. Bigelow and Ballard, and Miss Booth. Portland, Conn., is the address.

Dr. Charles Denison, of Denver, has issued a neat pamphlet of twenty-six pages on "Exercise for Pulmonary Invalids." It contains a number of figures illustrating methods that may be followed by anyone and without apparatus. For taking the kinks out of some of a dentist's muscles, these exercises are both simple and effective.

The proceedings of the second joint meeting of the *Scientific Alliance* contains a finely executed portrait of the late Prof. J. W. Newberry, "a self-trained observer and an independent worker," whose "relation to schools of science was creative, not receptive.' The "Memoir" is the work of Prof. H. L. Fairchild, of the University of Rochester.

A new illustrated dictionary of medicine, biology, and collateral sciences is in course of publication by P. Blakiston, Son & Co., and will be issued at a very early date Dr. Geo. M. Gould, already well-known as an editor of two other medical dictionaries has this one in hand, and as it is to be of the unabridged class his work and that of his able assistants will be exhaustive. If one may judge by sample pages the illustrations will be new and of the highest class.

END OF VOL. XIV.

THE
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CRYPTOGAMIC FLORA OF THE MOUTH.

Mr. J. Howard Mummery said that some attention had been drawn to the investigations of Dr. Vicentini, of Italy, on the cryptogamic flora of the mouth. He had been requested to describe those investigations and the theories Dr. Vicentini had founded upon them, in the form of a casual communication. He felt some difficulty in doing so owing to the absence of any translation from the Italian, a fact which had compelled him to rely upon the author's summaries and letters, and the Italian description of the plates. Dr. Vincentini's investigations were published in three papers communicated to the Royal Medico-Chirurgical Academy of Naples, between the years 1890 and 1893, and the question raised was one of considerable interest, though he doubted if many would be prepared to follow Dr. Vicentini in his deductions. The author claimed to have discovered a new form of micro-organism in the mouth, which he called "Lepththrix racemosa," and went so far as to say that the other pathogenetic bacteria of the mouth are but derivations of this micro-organism. In view of the misconception as to the real significance of the term leptothrix which existed, Mr. Mummery proposed first to give a short description of what is now understood by the term. In their work on dental caries published in 1867, Messrs. Leber and Rottenstein referred the organisms found in carious teeth to elements of the leptothrix fungus, and speak of them as characterized by the formation of a beautiful violet colour when treated with iodine and acids. The term leptothrix was really indiscriminately applied to various organisms in the mouth, some of them giving the violet iodine reaction, some not doing so, some showing distinct articulations, others none at all; in fact, as Dr. Miller says in his "Micro-organisms of the Human Mouth," "Almost every living organism occuring in the mouth was designated by this common name. Hallier, and many of his successors up to the present time, adopted this view. The motile bacteria of the mouth were regarded as the swarm spores of leptothrix buccalis, the immotile (cocci, etc.) as the spores at rest. Elements of leptothrix buccalis were found everywhere." The term leptothrix is now usually restricted to the forms of micro-organisms which occur in the mouth as long thin threads, which show no divisions or articulations, and which are not colored violet by iodine and acids. Very little is known with any certainty of the biology of the leptothrix forms in the mouth; they resist all attempts at cultivation on artificial media. If a scraping from the fur which forms upon the teeth is examined under a microscope, a matted collection of organisms is found, chiefly made up of masses of interlacing filaments enclosing in their meshes numerous micrococci and bacteria. To this thread-form, which is unjointed and does not yield a violet colour with acids and iodine, Dr. Miller has given the name of "Leptothrix innominata," the micrococci entangled in the meshes he does not consider to have any genetic connection with the threads, although they were formerly regarded as its spores. These threads and granules take a yellow colour with iodine and acids, but have no violet reàction. The long chains of bacilli which do show a violet colour with iodine the same author calls bacillus buccalis maximus, and the chains of micrococci which also show the same colour he names iodococcus magnus, other straight or curved filaments much resembling the bacillus buccalis maximus, but showing no violet reaction with the acids and iodine, he calls leptothrix buccalis maxima, but whether this is a distinct organism from the bacillus buccalis maximus or simply younger cells of the same organism, which in this stage do not yield the characteristic violet reaction, the author is unable to determine. It would thus seem that leptothrix meant very little as a strictly scientific term; it had been used as a convenient name by which to describe many various forms of micro-organisms in the mouth. And even when the subject was reduced to something more like order by the above classification they were still in complete ignorance so far as to the life history of the leptothrix and the genetic relations of the different forms. Dr Vicentini assigned to these organisms an importance even greater than they were supposed to possess before. He proposes to change the name of leptothrix buccalis in the old nomenclature (including the leptothrix innominata, leptothrix buccalis maxima and bacillus buccalis maximus of Miller) to leptothrix racemosa in order to indicate its fructification. This fructification, or sporulation, is only found in the upper layers of the leptothrix masses, whilst the old filaments of the same organism occupy, acccording to him, the deeper layers and constitute what has been formerly described, generally, as leptothrix buccalis. Dr. Vicentini used a $\frac{1}{25}$th immerson lens in examining his preparations under the microscope, and describes the appearances as consisting of—1st, The fertile filament or central stem with reserve geminules inside ; 2nd, The peduncles or sterigmata arranged in six longitudinal rows ; 3rd, The sporals ; 4th, A gelatinous protective envelope. The sterigmata or threads by which the sporules are implanted on the outside of the central stem cannot be seen with a lower power than a $\frac{1}{25}$th. Dr. Vicentini was very anxious that the occurance of these forms should be corroborated by others, and Mr. Mummery was also of opinion that it was desirable for the purpose of corroboration or contradiction that a thorough examination should be made by independent and competent observers. He had in conjunction with Dr. Miller made two attempts to see these organisms, and each time they were both unsuccessful, though on one occasion Mr. Mummery said he certainly detected appearances very similar to those organs which Dr. Vicentini compared to grape bunches, and made drawings of them at the time The regular lines of rounded bodies which the author considered to be spores, and the central stem were plainly seen, but not the minute peduncles by which he descriped the spores as attached to the central stem. The club-shaped appearance of these bodies was also very evident, but so far Mr. Mummery had been unable to see anything that he could identify as corresponding to the two forms of the male organs, although he did not consider he had done justice to the author in his search for them, and intended to renew the attempt. The forms which he saw certainly seemed to be too regular in shape to be explained as an accidental accumulation of granules or micrococci around an isolated filament, an explanation which had been given by some observers. Looking upon these appearances as representing the male and female organs of the leptothrix, Dr. Vicentini considered that this organism in its mode of reproduction showed analogies both with the fungi and algae.

Turning to the theoretical aspect of the subject, Mr. Mummery said that Dr. Vicentini derives the hitherto known forms of microorganisms from this one form, the leptothrix racemosa, in its various stages. For instance, he refers the filamentous forms, usually called leptothrix, to the inferior phases of leptothrix racemosa. To the detached sporules of the female filaments he ascribes the micrococci found in the mouth, and to the detached male elements he attributes the comma-shaped bacilli and some other forms. Revolutionary as the views advanced were, they nevertheless found some support from bacteriologists of some eminence; for instance, Nageli and Buchner had held that the species of bacteria are not fixed but are affected by variations in external conditions. Dr. Vicentini's views therefore differed from those just mentioned, in that he derived the different organisms of the mouth from the different phases and forms of one parent organism. While it was well known that many micro-organisms are pleomorphic, *i. e.*, they appear under different forms, yet if the abnormal conditions which produce these differences are removed they return to their original typical form. Indeed, if the dictum of instability were correct the scientific investigation of bacteria would be an impossibility; the view of inconstancy, however, had been rapidly losing ground as the methods of securing pure culture had advanced. In reply to the remark that his deductions do not harmonize with the results obtained by extended experience in cultivating mouth bacteria, Dr. Vicentini said his "arguments go to prove that culture experiments are not conclusive in deciding these cases of genetic connection, the inferior phases as in culture being common to entire families, the fructification being the fundamental differential character of the cryptogamic species." As Professor Miller points out, how, under Dr. Vicentini's views, can we account for the very different pathogenic action of the bacteria of the mouth. For instance: "A pure culture of the micrococcus of sputum septicaemia one or two days old will invariably kill a mouse or rabbit; a pure culture of some other bacterium from the same mouth under exactly the same conditions may have no action at all." This seems very extraordinary if they are all derived from one single form in the mouth. It was quite possible that as the study and knowledge of these lower fungi advanced, and the whole life histories of particular organisms were more carefully worked out, it might be found that some of these organisms are only phases in the life history of a more complex one, as suggested by Dr. Vicentini, but it seems to the majority of observers very improbable that so many distinct forms, differing not only in appearance but in vital action, should arise from one parent form only. There seemed, in fact, so little on which to base this assumption that one might, with almost equal justice, derive all the bacteria found in the body from the same organism, and Mr. Mummery thought the author would scarcely admit that. In conclusion, Mr. Mummery said that while he did not wish to be held in any way responsible for the views of Dr. Vicentini, he thought them of sufficient interest to engage the attention of a society like that he was addressing.—*Record.*

THE LABORATORY.

Why do so many dentists consider prosthetic post-graduate schools like Dr. Haskell's, a necessity? What is the matter with education in the purely mechanical branches of our profession, that so many men graduate from our colleges, unfitted to master the ordinary, much less the extraordinary difficulties of the laboratory?

Many young men enter upon the study of dentistry with the idea of being expert operators, and leave with the idea that if they attain the feeblest skill at the chair, they need not be mechanics. In college life it was extremely difficult in the past, and it continues so in a lesser degree, to force concentration upon the work of the laboratory, and the young men were busily engaged at the chair before they could properly construct, from start to finish, an ordinay set of vulcanite. It is much the same as if the medical student began his first year with obstetrics and pathology, without having learned the first principles of anatomy and physiology. It is not uncommon to find students, in their first six months, dabbling in operative work, when they do not know how to make an articulation, or to polish an ordinary set of teeth. They have no pride in the property in the laboratory; their tools are dirty and kept in disorder; the lathes are covered with the debris of a week's polishing material, and yet they are happy. We have watched the career of some of these boys. If they have turned out clean, and careful for themselves, it simply proved that they were dirty and dishonest as students; but as a rule the habits they displayed in the laboratory when learning, followed them through life. Vulcanite has been in many ways a curse to the profession, and we may add to the list this fact, that it has been the means of developing a generation of careless and dirty students, who are a reproach and an obstruction to the higher ideal of dental practice. In the olden time of gold and continuous gum work, the laboratory was at least as clean as a jeweller's bench. There are model laboratories to-day where vulcanite predominates, but they are few and far between in comparison with the period when vulcanite was unknown. How do we explain this fact? Chiefly because students start out with a low standard of opinion as to the skill required to construct vulcanite, and they are as impatient to run as they are indisposed to creep. The result is that when these boys become practitioners they find themselves handicapped; they meet difficulties they cannot overcome, and they have to begin to learn! It is in every way wiser and more fitting to get, in the beginning of studeut life, the ground-work of mechanism in all its branches, theoretical and practical; a knowledge of the use and care of tools, and apparatus and to have a clinical experience of prosthetic dentistry before a thought is given to the work of dental operating and pathology. It would not only be better for the student, but certainly for the dentist in whose office the student may be getting his early tuition.

Even if a dentist intends to delegate the mechanical department to an associate or an assistant, he cannot afford to be indifferent, much less ignorant. We cannot put our patients where we put our models and our dies. The patient who consults a dentist expects his personal advice, and in most cases his personal attention. One may go to a barber and take his choice of half a dozen workmen, but as a rule, the dentist of many chairs and many operative assistants is a quack, or has a quack's instincts, and is keener to make his practice purely mercantile than professional. If dentistry is to descend to that sort of practice, it will degenerate ethically until it is relegated to the rank of a trade. It is foolish for a dentist who desires to do the best for his patients to place himself at the mercy of mechanical assistants, who may leave him in the lurch on short notice. Personal skill in mechanical dentistry is necessary, even to one who has to direct assistants. It seems to us that, all things being equal, a student who is occupied twelve months of his first year exclusively in the laboratory, should get a better training than where his career begins in a college, in utter ignorance of all the minutiæ of the laboratory.—*Dominion.*

THE CARE OF THE TEETH TO THE FIFTEENTH YEAR.

Naturally, according to the order of their development, we shall be concerned first with the lower permanent molars.

With all families regularly under my care, I aim to have each child well in hand and in good training by the time these teeth appear. Without waiting for the teeth to get well through, I make a careful examination of all the fissures in the crowns. To do this, I often lift the flap of gum which commonly lies over the posterior portion of the grinding surface with a peculiar instrument made for the purpose. If I find a soft place, even if it is not a pronounced cavity, I clear it out with a round-pointed instrument which is like a probe or examining instrument, and fill with oxyphosphate or tin-foil. I make very little attempt to cut out or prepare these little fissures, because at that time they are imperfectly calcified, and the tissue is so soft that quite a cavity could be easily made. A round-pointed instrument is all that is required for scraping out these fissures if they are to be filled with oxyphosphate.

A year later when the tooth has grown out of the gum, and the filling nearly washed out, the border of the fissure will be so well calcified that a real filling may not be required. These teeth at this time do not antagonize with the upper molars, even if they are erupted, which they generally are not ; so that the entire crown can be covered by the filling, and all its fissures protected, whether they show signs of softening or not.

For many years it has been my habit with soft teeth to wash out these fissures and put a pat of oxyphosphate in them, even if they are not softened at all. If they are dried out the filling will usually stay, even if no cutting has to be done. This serves as a protection while the gums lie over the ends of the teeth, and while they are still unused in mastication. When the tooth gets well through, and is antagonized and used, the danger of softening of the fissure is greatly lessened. When the upper molars are through they are treated in the same way.

Later, after the lower molars are well developed, the little fissures on the buccal sides are to be carefully watched. If these are deep enough to catch the instrument, cavities must be made which will always have to be kept filled. There is no chance on this surface for the same kind of protection that can be given on the grinding surface, pending the calcifying process. Here it must be a cavity for all time, or not at all. These little buccal cavities can often be filled in a few moments with tin foil, in such a manner as to last many years. I almost never make any attempt at this time to fill them with gold, for the reason that I think I can fill them better with tin. If the child has not been brought soon enough, and cavities on the grinding-surfaces are of considerable size, I fill them almost invariably with tin or oxyphosphate. Sometimes, and for reasons which cannot be easily made plain here, I fill them with gutta-percha, but not very often with amalgam, and certainly not very often at this age with gold.

Although not quite in the order of time, it may be well here to dispose of the anterior approximal surfaces of these teeth. While the last temporary molars are in place these surfaces must be watched most carefully, and the slightest sign of decay must be regarded. I fill on these surfaces almost invariably with gutta-percha, as on all sheltered approximal surfaces. I believe this material will last longer than any other of the plastics. But when the baby molars are lost, and the anterior surfaces of the sixth-year molars are exposed, I almost invariably fill with gold, and in the most careful manner, and always strictly with regard to to the natural shapes of the teeth, being careful to bulge the fillings out to a full contour, so that when the second bicuspids grow up they will rest against the fillings and as little as possible against the teeth. This operation is often difficult to perform. It is the first serious one the child has been asked to submit to, but there is no escape from it, for never again will the surfaces of these teeth be so favorably exposed and the opportunity given for the performance of so perfect an operation. If left until the second bicuspid is in place, then, of course, the teeth must be separated, and it will not be possible to reach the entire surface in so satisfactory a manner.

For this operation the rubber-dam is of course applied, and after the actual decay is removed, the whitened, partially decalcified margins of the cavity are bevelled so as to allow of extending the gold filling out on all sides beyond the real margin of the cavity. If the entire front surfaces of these teeth can be covered with gold, of course they will be safer when the bicuspids are in place against them.

The performance of this operation may mark the first real encounter with the young patient. If there has been gentleness and leniency before, there must be firmness and thoroughness here. But of course the patient is old enough by this time to bear such an operation, and to understand its significance and importance, and it is not often that one cannot, with the use of such obtundents as we now have, perform this operation in a perfectly permanent manner.

It seems to me that whatever may be said in favor of plastics before the fifteenth year does not apply with equal force to these approximal surfaces. In the first place, as before mentioned, they can never again be so well reached ; and in the second place, they have been standing during several very dangerous years in contact with the baby molars, and if not actually decayed, their surfaces are likely to be more or less softened and in a condition favorable to decay soon after the bicuspids are in place. Gold is the only material that can be carried out to a thin edge over these bevelled margins with any certainty of its staying where it is placed. I instruct all parents to promptly bring their children when the posterior baby molars are lost. If they are careless about usual examinations, I beg them to be careful about this.

On the buccal surfaces of the first permanent upper molars, cavities sometimes occur which extend around partly on the posterior approximal surfaces. These cavities I usually fill with tin or gold before the appearance of the second permanent molar, and also for the reason that the posterior surface can never be so easily reached after the latter molar is in place. The posterior aspect of these buccal surfaces is very apt to be decayed before the second permanent molars are in place The careful polishing of these surfaces, if promptly done, coupled with special directions for careful brushing, will often save them from decay.

"You must brush your teeth more," is advice that, given in the usual way, generally goes in one ear and out the other, with the average patient of this age. But often a few earnest, impressive words, expressed with tact, will work wonders with some patients. The young mind is impressionable, and doubtless we do not always realize the effect a few earnest words may have. But they must not be expressed with the manner of a school-master. If the young patient is complimented with the assumption of possessing intelligence, and that intelligence is appealed to in a persuasive, convincing way, the seed may be sown in productive soil that will bring forth more than a hundred-fold. And this education of our young patients to an appreciation of the value of proper care of the teeth is as much our duty as to fill their teeth properly. I am sure most of us are too negligent on this point.

We must now go back several years to take up the superior permanent incisors. When these teeth are decayed on the approximal surfaces, one is brought face to face with a serious problem. The question is, To what extent shall gutta-percha, oxyphosphate, or tin-foil be used ? I must say to you frankly that in most cases I use one or the other of them in preference to gold. Of course, I shall expect to be criticised by many for this, but I must be governed by the results of my own observation, and I have seen so many cases where gold fillings have so quickly failed, particularly when made soon after the teeth are erupted, that I have grown very shy about the use of gold at this time. At this age the the teeth are so soft that even little cavities have to be enlarged to get the firm margins required for gold fillings, and when failure comes there must follow a still greater enlargement, so that by the time the child has arrived at twelve to fifteen years of age, by which time several renewals may have been required, large cavities exist.

If, instead, the teeth, when softened and slightly decayed, are opened with a separator, polished with a fine sand-paper strip, the little cavities cut out, *not too thoroughly*, and filled with a good quality of gutta-percha, or sometimes with tin-foil, and several renewals of these fillings up to the fifteenth year, the chances are that the cavities will not be as large as if gold had been used. If as large, it is safe to say they will be no larger. There is still the advantage that not so much work has been done, and not so much expense incurred. Of course, if the teeth are of first-class quality, this does not hold true to the same extent as in those that are very soft, and in mouths that are destructive. The failure of a gold filling necessarily implies increase in the size of the cavity. The failure of a gutta-percha filling does not, by any means, imply such an increase. It fails from waste of substance of filling, and not from increase of cavity, and the same is true, to some extent, with a tin-foil or an oxyphosphate filling.

I have come to have very pronounced opinions on this question of selection of materials for young, soft teeth. Having had to manage a large practice for many years, I have often been forced from lack of time to adopt this plan of treatment for temporary purposes, but I have seen such good results from it when applied in this way that I have come to regard it, under certain conditions, as the very best practice for permanent purposes. I could show you cases where the bicuspids and molars are contoured with gold in the most elaborate manner, and yet on the approximal surfaces of the incisors only gutta-percha has been used for the last ten or fifteen years. Many renewals of the gutta-percha have, of course, been made in all this time, but there has not been an increase in the size of the cavities, and the teeth present a better appearance than they would if filled with gold. These fillings are in the mouths of most particular patients, who expect the very best treatment. The silk is used daily, the approximal surfaces are kept clean, and decay does not recur around these fillings. In making the renewals, only a few moments are required. A separator is applied, and space enough gained for passing a thin emery silk strip for finishing. After the filling is inserted, a piece of floss silk, wet in chloroform is passed between the teeth and the thing is done. Why should I fill these teeth with gold when year after year shows no increase in the size of the cavities, and the patients greatly prefer to have them as they are? Of course, these are extreme cases, but they serve to show what can be done when great care is applied to this kind of treatment.

The next teeth in order are the second permanent molars. The fissures in these I treat in nearly the same manner as those of the first permanent molars.

The next after these are the bicuspids. The fissures in the crowns of these I also treat in nearly the same manner,—that is, I fill them with oxyphosphate or with tin-foil, mostly with the latter. In cutting out and preparing these fissures, as well as those in the molars, I am careful not to make large holes. I usually cut them out with extremely fine excavators, and aim to make the fillings as small as possible. If I use the engine for these, it is with only the minim burs, which are of course the smallest in the market. The engine is a savage instrument, and there is great danger, in its use, of cutting larger holes than are necessary. The teeth are priceless structures and should be operated on with a feeling akin to reverence. This feeling is not much encouraged by the use of these modern dental saw-mills, which in steady hands may be safe enough, but which in unsteady or unwise ones may do an immense amount of mischief.

If the teeth are of good structure and the margins of the fissures hard, I fill them with gold once for all. With these teeth, as well as with the second permanent molars, we are dealing with a child older and more manageable than when the first permanent molars first required attention, and there do not exist quite the same reasons for the use of plastics.

We come now to the approximal surfaces of the bicuspids and molars. As with the corresponding surfaces of the incisors, we have to meet a question not easily disposed of. To a certain extent, with cavities to the fifteenth year, I follow the same plan as the one I apply to the incisors. If the teeth are very soft and the cavities very little, I almost invariably open them with the separator, polish the approximal surfaces with the sand-paper, and cut out the decay and fill with gutta-percha or tin-foil, being careful to in no way injure or change the contour of the teeth. In doing this I cut in from the buccal or lingual side, or down from the grinding-border, though I avoid, if I can, going through the enamel on the grinding-surface.

If the tooth is of fair quality, and the cavity so large that the enamel on the grinding-end is already crushed in, I treat it somewhat as I do the anterior surfaces of the first permanent molars,—namely, fill promptly with gold in the best possible manner. Such cavities, when filled, would leave but little of the tooth standing in contact with its neighbor, and there would not be much danger of a renewal of decay.—PERRY (S. G.), *International.*

NO MORE NEED APPLY.

The General Medical Council of Great Britain has settled the matter for those who commenced their course of study at Harvard and Michigan Universities previously to the passage of the law rejecting all American diplomas.

This is unquestionably the only consistent course, although it bears severely on the young men who had honestly endeavored to fulfil the requirements of the law. It is very evident that the editor of the journal of the British Dental Association voices the sentiment of English Dentists when he plaintively says, "To us the applications prove how urgent was the necessity for a change in the administration of this portion of the Dentists' Act." He evidently anticipated a mob of young American dentists, and was ready to give thanks that the deluge had been averted.—*International.*

Another reason for not only maintaining as at present the McKinley bill, but adding to its alleged oppressiveness (to the other fellow).

THE TREATMENT OF PERICEMENTITIS.

Probably one of the most painful affections with which the dentist has to deal is that of acute pericementitis immediately preceding alveolar abscess. This is easily accounted for when we consider the anatomical relations of the tissues surrounding the root of a tooth. The pericementum is encased in a bony socket with unyielding walls on either side, and a slight degree of inflammation results in an undue amount of pressure. No matter from what cause pericementitis may be induced there sometimes comes a stage when no kind of treatment directed into the pulp chamber and through the canal is in the least effective. It is to the consideration of this phase of the affection that I wish briefly to call your attention.

In those cases where the canals have been opened up and a free vent made for the escape of gases, and this has failed to bring relief, it is an indication that the tissues of the peridental membrane have become so far implicated that the inflammatory process will go on independent of further irritation. This has always proved in my hands the most difficult stage of the affection to control, till within the past two or three years. During that time I have followed a practice which if faithfully carried out has seldom or never failed to give satisfactory results. The treatment consists in the application of moist heat to the gums surrounding the affected tooth.

The method of proceedure is as follows: Water as hot as the tissues will tolerate is taken up in a large bulb syringe having a fine point. A jet of hot water is directed upon the gums and into the cavity of the tooth, all cotton or other dressings having previously been removed from the canals. The tooth and surrounding tissues are thus submerged in water as hot as the patient can tolerate. During the refilling of the syringe the water is to be retained in the mouth and then emptied into the spittoon just previous to another application. The water should be kept on a gas stove near at hand and the heat gradually raised as the tissues will admit. It will be found that in the end water extremely hot may be used if the heat be gradually increased, and one of the essentials to success in this treatment is to employ an exceedingly high degree of heat. If the tongue and other tissues of the mouth remote from the region of the tooth are too much affected by the water, a saliva ejector may be used to carry off the water after it has flown over the gum in the immediate vicinity of the inflammation. The gum in this region will often tolerate a much higher temperature than the normal tissues. In fact an application so hot as to be extremely painful to normal tissue often proves instantly soothing to the affected parts. The process should be kept up until perfect relief has been obtained, and the length of time necessary for this varies in different cases. In some instances where the pain is most distressing prior to the application the sense of relief will appear so suddenly as to prove astonishing, while in others it will require persistent treatment for perhaps thirty or even forty minutes before a substantial effect is produced. I have never yet encountered a case where persistent effort failed to finally bring a cessation of pain. As to the permanency of the relief, this is governed largely by conditions and circumstances.

If the general tone of the system is bad ; if there is universal congestion strongly marked by the symptoms of what is commonly called " a heavy cold ; " if the circulatory and absorbent systems are badly out of condition ; or if the excretory organs fail to perform their function, then the relief is necessarily temporary, and we must resort to constitutional treatment in order to gain permanent results.

A patient in this condition should be given a rapidly acting cathartic, the citrate of magnesia in large doses having proved in my experience the most pleasant and satisfactory. Again, if the inflammation has gone on to a point where suppuration has begun in the apical space, we cannot hope for complete relief till the abscess has pointed and discharged, but even in these cases we may be reasonably sure of preventing extensive infiltration and puffing of the superficial tissues, and also of mitigating the suffering.

As to the circumstances which may render the relief temporary, I have noted that if the patient left the office immediately after the hot water application, and went into the open air on a cold day without carefully protecting the whole side of the face from the air, the pain would ordinarily recur. In other words, exposure would bring back the trouble. But not the least among the gratifying results that have followed this line of practice in my hands is the large per cent of cases where a permanent relief has been gained.

A criticism might be made by some as to advisability of leaving the cavity and canals open during the treatment. The argument might be used that there was danger of additional infection through the medium of the open canals, but I have never seen a case where I could trace any evil effects to this cause. My reasons for leaving the canals open are, that I wish the hot water to reach the apical space if possible, and that there may be a likelihood of the water, in flooding the cavity and canals, floating to the surface or dislodging small particles of debris that may have been packed in the canals near the apical foramen, and which the broach has failed to bring away. I never leave the cavity open when I dismiss the patient. If the tooth is not too sensitive to pressure I usually dry the canals as thoroughly as possible after the pain is relieved, and then flood them with an antiseptic. A small pledget of cotton saturated with the antiseptic is then placed loosely in the chamber, and the cavity sealed with Gilbert's temporary stopping.

The canals themselves are never packed with cotton at this sitting, and if the tooth is much raised in its socket, and extremely sensitive to pressure, I do not even attempt to seal with guttapercha. A tooth in this condition should be worked upon with instruments as little as possible. The mechanical irritation invariably results in increased sensitiveness.

When the tooth is loosened and sore from swelling of the pericementum, I simply dry the canals, flood them with an antiseptic, and place some cotton in the cavity merely to keep food and debris from packing into the tooth. I should much prefer dismissing the patient in this condition and taking chances of infection through the imperfectly sealed cavity to attempting a thorough sealing at this sitting. These are mostly emergency sittings, and our principal office is to relieve the present distress. Usually in twenty-four hours the tooth will be in a condition to work upon, and it may then be treated and sealed.

The simplicity of the hot water treatment would seem to argue that the case could as well be treated by the patient in his own home as by the dentist in his office, but my experience has taught me that the results are seldom satisfactory. Somehow patients do not succeed, no matter how careful the instructions. They do not use the water hot enough, or they do not apply it properly, or do not keep up the application a sufficient length of time.

In fact, the element of time in this treatment proves one of the greatest obstacles to its practical application. As has been stated these are emergency cases, and are likely to call for attention at any hour through the day without previous appointment. In a full practice where almost every moment of every hour is systematically assigned in advance for the regular routine work of the office, it is exceedingly trying to the operator to be called away from his work to devote any considerable time to an unexpected patient. In those cases where I have fallen short of producing the most satisfactory results it has been traceable to this dilemma. And yet a dentist's first duty as a practitioner and as an individual is to relieve suffering no matter when or how it appears.

In searching for a theory to account for the results obtained by the application of hot water I was led to consult Dr. W. T. Belfield in the matter. I then learned for the first time that he had long been a strong advocate of hot applications for the relief of pain in other tissues. His theory was that heat, especially moist heat, was an anæsthetic. This would account for the relief of pain temporarily, but if this were the only action of hot water the pain would recur in a short period. To account for the permanent results which I claimed to have undoubtedly secured in many cases, he said that hot water applied in the manner I had indicated would prove a very rapid and effectual absorbent. It is to this latter quality that I attribute the lasting results, and this argues especially for a somewhat protracted application.

Dr. Belfield also stated that in the use of hot water, a very minute stream should be used to play upon the tissues. A jet such as would come from a hypodermic needle he had found more effective than a larger stream.

In conclusion I may add that in some cases where the pain has been excruciating, I have added to the hot water a few drops of carbolic acid, making about a five per cent solution. The anæsthetic effect of carbolic acid is thus added to that of the hot water, and the relief is exceedidgly prompt and very gratifying to the patient. —JOHNSON, (C. N.), *Review.*

THE ADVANTAGES AND DISADVANTAGES OF SPECIALISM.

Dentistry has attained to the dignity of a profession. By and by a volume will be published, I do not doubt, entitled "Great Dentists," as now we have volumes on "Great Surgeons," "Great Lawyers," "Great Divines." But the time has not yet come for such a volume, as the profession is comparatively new. As a writer in the "Encyclopædia Britannica" puts it, "For long, dentistry was practised to a large extent as a superadded means of livelihood by persons engaged in some other pursuit, and without any professional educution whatever. The blacksmith, the barber, the watchmaker, and others of the same class were the dentists of every village and country town; while even in some of our larger cities dentists of the kind were till lately to be found practising under the very shadow of our universities and public schools." These words refer primarily to England, but they sufficiently well fit the past condition of things on this side of the ocean, if the speech of the men of seventy years and upward is to be taken as reliable. In our days it is not considered so respectable for a man to be a general practitioner as it is to be a specialist. The time has gone by when one and the same man taught classics and mathematics. The professor of Latin seldom ventures nowadays in any but a third-class academy or school to be also professor of Greek. Every man has to be more or less of a specialist. The definition of a learned man or a scholarly man in our day has changed from what it was in the days of our grandfathers. Then a learned man was a man who professed to know all that was knowable of most everything. He was a walking encyclopædia, or, as was said of Macaulay, "a book in breeches." Now the encyclopædic man is generally regarded as a charlatan. A learned man in our day is a man who knows everything of something and something of everything. Some of his knowledge must be microscopic, but most of this knowledge telescopic. He is minutely acquanted with some one thing and generally acquainted with many things.

I assume that the gentlemen here present know everything that is to be known about teeth. And yet I doubt it. In order to know everything that is knowable about teeth, is it not necessary that all and everything which is preliminary to the growth of a tooth should be known? It is certain that teeth are associated with the whole animal organism, and that the whole of the organism contributes to them, so much so that the reason why you and I have the teeth that characterize us is not satisfactorily accounted for by simply examining the teeth. At the back of the teeth is the blood in the veins, and at the back of that one knows not how many rogues and rascals in our ancestry until we get back (as one gentleman I talked with the other day assured me he did) of William the Conqueror.

In order to give a full and particular account of anything belonging to any individual man, it is necessary to know vastly more than is revealed in the man's own individuality. A certain English nobleman, recently deceased, was what is called a kleptomaniac. He had everything that heart could wish, much more of wealth than any sane or insane man could legitimately use, and yet if he were left by himself for a while he would be like that politician who the first time he found himself in Washington, contrary to all his former propensities, had an overmastering desire to steal something. So this English nobleman, richer in money than Crœsus himself, had in his blood the persistent tendency to steal. How had it got there? Had it no relation to the fact that in days long ago his ancestors used to go on foraging expeditions and drive off the cattle of their weaker neighbors?

Now, if a learned man is a man who knows everything about some one thing, a learned dentist should be a dentist who knows everything that is knowable about teeth. But in order to do this he must know something about anatomy and physiology, and much else besides. For anatomy and physiology are associated with psychology and mental philosophy generally. The influence of mind on matter is only beginning to be appreciated. We are on the edge of a realm of knowledge which is as certainly hidden from us now, or revealed to us only suggestively—as much hidden as was the realm of the infinitely little before the invention of the microscope, or the realm of the infinitely great before the invention of the telescope.

Now, the tendency of specialism is to take the telescope out of a man's hand and leave him only with a microscope. The tendency is to imprison him within the limit of his specialism—to bring his mind under the power of the ideas and laws of that specialty which he is constantly studying. The mind of the specialist has a tendency to conform to the thing about which it is persistently and continuously occupied, to take its tone, its color, its mode of vision, the way in which it looks at things from the particular region to which it bends its attention with most interest and with daily recurring constancy. The mathematician gradually loses all power of estimating the value of anything which cannot be mathematically proved. Unless by studies not mathematical he keeps his mind fresh and free, some of the most fascinating departments of knowledge will gradually lose their influence over him and he will be as mentally enslaved as the man who, looking at a most suggestive work of art full of life and expression, could make no remark but one. The size of the canvas led him to exclaim, "I wonder how many pounds of paint it took to produce that thing?" So, also, the biologist, the geologist, and other ologists, confining themselves to their specialty, gradually get their minds trained down to the conditions under which they are daily working, and come into an ability of appreciating only one kind of evidence. Illustrations of this abound. There was never a more convincing instance of the way in which the mind of a very eminent and distinguished man comes to settle into the mould of its specialty than when some years since Professor Tyndall asked of certain London divines that the question whether God answered prayer should be submitted to a practical test suggested by himself. The test was that the London Hospital should be divided into two sections. The church should offer up its prayer for the sick on behalf of the people in the wards on one side of the hospital, and not those on the other side. The result of the experiment should decide the question. Now, it is scarcely credible that such a suggestion, from the mind of such a man, could have been made seriously. Both God and all good praying people must have accepted as reasonable and intelligent Professor Tyndall's suggestion before it could have been made. To begin with, Tyndall's idea of prayer was not Christian. It was so ignorant an idea of what prayer is that a well-instructed Sunday-school child would see the defect in it. That Tyndall was serious there can be no doubt. The fact shows one of the dangers of our nineteenth century specialism, and how it reduces the minds of even superior men to the level of the particular branch of science in which they are constantly working, as the dyer's hand takes the color of the dye in which he puts it. That is why in that wonderful "Journal of Amiel," next to the thoughts of Pascal one of the most suggestive books of its kind ever issued, the writer says, "Science does not make men, but only entities and abstractions." Scientific men are so given to analysis that many of them live in a dissecting-room for a period of their natural life. We may analyze a rose till we have no rose. We may dissect a human body till we have no body. To much concentration tends to fix the mind on parts to the neglect of the whole. That every part suggests a whole, and needs a whole to explain it, is a fact of which we must never lose sight. That is what Tennyson is trying to say when he plucks the little flower out of the crannied wall:

"Flower in the crannied wall,
I pluck you out ot the crannies:
Hold you here, root and all in my hand,
Little flower, but if I could understand
What you are, root and all, and all in all,
I should know what God and man is."

Specialism has, then, the advantage of giving a minute knowledge of some one part of the human organism, or of some confined region of science. The man who gives exclusive attention to the eye eventually arrives at a knowledge of all abnormal conditions to which that organ is liable, gets to discern every symptom and sign of disease, and to acquire all the scientific knowledge and skill which up to date belongs to his particular specialty. So with the ear, so with the throat, so with the brain—a much more complicated specialty than the others I have named. So with every other organ and region of the body. And these specialists are the men to consult if you can afford to pay them their high fees, and if you are intent on commanding the best assistance which science can offer. Specialism is a distinct advance upon generalism. Not one word other than a word of gratitude to that Providence which is always moving the race onward towards something higher and better have we to offer in regard to it. Its helpfulness is often wonderful, its advantages are beyond question. So far as the general public is concerned, specialism is an immense gain.

But I am thinking of the effect of specialism on the specialists themselves. The question is whether we are not in our generation growing a large crop of men who are learnedly narrow, and that because they are confined to too microscopic work, to research into detail rather than to research on the broad continents of knowledge, is a question which cannot be waived aside as if it were not worth the asking. They are laws of mind which are unalterable. The mind conforms itself to what it persistently studies. The laws of that branch of science control in its judgments. They determine its modes and methods of thinking. Their tendency is to materalize the mind, and to compel it to think on all subjects mental and moral as if there were no other laws in the universe than material laws. So far as his thinking goes, a man is apt to see everything through the spectacles that have insensibly come over his eyes from the specialty with which he is persistently occupied.

As an illustration of what I mean, let us take the work of a modern man for eminence—a man of whose goodness and greatness those who know him personally have no doubt. I mean Professor Henry Drummond, whose lectures at the Lowell Institute here in Boston commanded so much attention. The book which made him famous is entitled "Natural Law in the Spiritual World." "None," says Professor Drummond, "except those who have passed through it can appreciate the radical nature of the change wrought by science in the whole mental attitude of its deciples." And he goes on to teach with much wisdom and learning, and with that charming style of his which makes it so easy and so delightful to read him, how the thought of evolution permeates everything. He seems to be quite unconscious of assuming very much more than he can prove, in writing his book on the principle that "natural law," by which he means the law which is revealed in material nature and deduced from it, is identical with spiritual law—the law of mind, and will, and imagination. His book is constructed on the assumption that natural law and spiritual law are identical. He assumes that the same laws which govern vegetable and animal life govern mind. I venture to say that he assumes it without proof. Indeed, we may say with much of positiveness that it is utterly impossible that the laws of the spiritual world, considered as a whole, can be identical with the laws of the natural world. The simple facts of free will and moral responsibility are themselves enough to create a radical difference between the two worlds. I know from personal communication with Professor Drummond, that if he had to issue his book now for the first time, that it would come from the prees simply as an analogy and not as an argument—simply as supplying instructions which are wonderful and helpful. It is only fair to say that much. But it is an illustration of the fact, of which there can be little doubt, that the devotion of the mind to scientific pursuits is apt to engender a certain outlook on the universe, which, if not corrected by other considerations, may find it difficult to recognize the signs of the supernatural in nature and in history.

Now, if a man like Professor Drummond, who is a remarkably open-minded man, can fall into this error of assuming that material law is the measure of all law, what are we to expect from men of a much lower type than he? Is there not ground enough and reason enough to say to all specialists, Beware of assuming that all the laws of the universe are to be interpreted by the laws you find working within the narrow area to which your study and observation are confined? Is there not a necessity to say to men who are specialists, Be sure you do not live and move and have your being within the limits of your specialism? Correct the tendency which your specialism creates to learned narrowness by taking excursions into all kindred departments of knowledge. It is marvelous how a man may all but destroy his ability of enjoyment in the region of his higher faculties—the poetical and historical faculties of his soul—by a servile attention to things that are minute and simply external. I was reading not long since, in a book by Dr. Birkbeck Hill, of Oxford, the following incident, which is by no means a bad illustration of what I mean. "A friend of mine in this university told me that before he had come up to Oxford he had read Virgil's 'Æneid' through with great delight. In preparing for the examination known as 'Moderations,' he was taken through it by his tutor once more, who treated Virgil not as a great poet, but as a convenient instrument of instruction in the niceties of grammar. Under the guidance of this teacher—

> 'One whose hand,
> Like the base Indian, threw a pearl away
> Richer than all his tribe'—

my friend gained his first class and lost forever his enjoyment of the Æneid.

"The man who would use a great poet for beating grammar into a boy, who would parse 'Hamlet' and analyze the 'Paradise Lost,' would not for one moment hesitate to botanize upon his mother's grave."

With all the advantages of specialism, and they are manifestly many, it is necessary to recognize that a man's specialism may so tyranize over him, as to drag him down out of the freedom and largeness of his manhood into being simply an oculist, or an aurist, or a dentist—the laws of specialism so controlling the man that he views everything on earth, above the earth and under the earth as a mere mechanic, and not as an artist. Even a man who is technically an artist and paints pictures may and often does become a mere materialist, a copyist of the externals of nature, with no imagination and no spiritual faculty whatever. The Greeks themselves, when they had attained to the highest competency in sculpture ever reached in the history of the human race, seemed to lose all ability except the one ability which has immortalized them. They had studied the human body and the art of expressing it in marble until they lost all sense of modesty and decency, all ability of appreciating the moral and intellectual, so that a Pericles was a nuisance to them, and for Socrates there was nothing better than the cup whose content was death.

While, therefore, we pride ourselves on the wonderful advance we have made in dentistry, surgery and other departments of knowledge and achievement during the last half century, there is a necessity for reminding ourselves of the tendency of an age of specialists to produce men in large numbers who are illustrations of learned narrowness, men whose minds are warped, sectarianized, and materialized—men whose world is a very much smaller world than it would have been if they had given serious heed to other studies than the bread-and-butter studies of life.

Moreover, it ought to correct our tendency to conceit and self-congratulation when we remember that with all our advance there are some things—yes, many things—which animals and even insects can do better than we can do. In their special line bees and ants are capable of giving points to men. The business aptitude of ants is as great or greater than that of men. The science of government in the United States appears like the veriest tyroism when we go to the bees. Our rebuke of laziness and do-nothingism is feeble indeed compared with the practical indignation shown by bees to drones. "The more I know of dogs," says Madame de Stael, "the less I believe in men." We might add, the more I study insects, birds and animals, the less I pride myself on my mechanical superiority and my genius as a specialist. There is scarcely anything that man can do along the lines of these modern specialisms, however wonderful it seems, that cannot be eclipsed by something which some insect or bird or animal can do.

Man's superiority is in the connective and associative faculties of his mind. His ability of collecting his knowledge with all other knowledge; his ability of large discourse, looking before and after—yes, and we may add above and below. He connects his earth with that multitude of earths which we call the planetary and stellar systems, and thus realizes that he is not only a citizen of the world, but has an inheritance in a universe. Not only has he world faculties, but universe faculties. He has little use for them at present, but every germinal unused faculty has a promise and prophecy in it. I think it was that very extraordinary man, the late Professor Sterling Maxwell, of Cambridge University, England, who suggested to us that in our nature there are latent faculties for which, in this present world, we have no use. Apart from their existence, it is, according to Professor Maxwell, very difficult to account for certain peculiarities in the higher faculties of men. This tendency of men to associate the known with that which the known suggests—to associate the seen with the unseen—a tendency found in all the highest natures, puts man in the scale of being far above every other creature occupying the earth. If this competency is distinctive of man, it indicates that his manhood consists not in anything in which he is like other creatures, but in that in which he is unlike them. Manliness is something quite distinct from animalness. It is only as we conquer and subordinate the animalness in ourselves that we develope the manliness.

We have often been reminded that there is such things as *professional pride.* I think such pride to be good and worthy. Do we not owe to the profession to which we belong such character and conduct as will add to its worth, respectablilty and dignity? We hold the reputation of other men in our keeping, as well as our own. Every profession has in it men who are unworthy of it, men who regard it simply as a business by which to earn bread and butter. Doubtless there are such vulgar souls in your profession, as there are in mine. I say "vulgar souls," using the word "vulgar" in the way in which it is used by that artist in the use of language, John Ruskin. "Vulgarity," he writes "consists in a deafness of the heart and body, gentlemanliness being another word for an intense humanity." Vulgarity shows itself in inability to feel or conceive noble character or emotion. This is its essentially pure and most fatal form.

There is no reason in itself why the profession to which gentlemen here present belong should not give time and opportunity and stimulus for nobler studies than those immediately suggested by a narrow view of its area. There is no reason why in it, as in surgery and medicine, there should not be developed a professional pride. But it is well for us all sometimes to face the great facts of life and interrogate them. Whaterer our business in life be, it may be dignified or undignified. We may be artists or mere mechanics. As Gladstone says, "Our life may be food to us, or it may, if we will have it so, be poison." Every profession has its temptations, mine and yours. You know what yours are better than I can tell you. To cherish professional pride is helpful to triumphing over these temptations. An organization like this, and everything else which lends dignity to the profession, is to be fostered as good. If it were to be assumed that your profession had already attained to the utmost of its excellency, such an assumption would only indicate how narrow were the limits within which your profession moves.

The time will come when a visit to a dentist will have no more terror in it than a visit to a physician, who simply feels your pulse and looks at your tongue and asks you the usual questions, and then gives a bottle of sugar-coated pills. It is this perpetual striving after excellence on the one hand or the want of it on the other which, more than the original difference of gifts (certain and great as that difference may be), contributes to bring about the differences we observe in the works and characters of men. It becomes us never to forget that while professional and other men seem to be doing so many things, each and all are doing one thing—the building of character. No man living can escape that. Every day and hour that is going on. That most popular of all professors in the

Universities of Scotland, Professor John Stuart Blackie, of Edinburgh, may be a trifle dogmatic when he says, "The merely professional man is always a narrow man; worse than that, he is in a sense an artificial man, a creature of technicalities and specialties, removed equally from the broad truth of nature and from the healthy influence of human converse.

"But if a man will fix his mind on merely professional study, and can find no room for general culture in his soul, let him be told that no professional studies, however complete, can teach a man the whole of his profession; that the most exciting professional drill will omit to teach him the most interesting and most important part of his own business—that part, namely, where the specialty of the profession comes into contact with the generality of human nations and human sympathies. Universal experience, accordingly, has proved that the general scholar, however apparently inferior at the first start, will, in the long run, beat the special man on his own favorite ground."

Such an opinion of such a man justifies, I think, my choice of a theme on which to offer the ideas I have been able to suggest—the advantages and dangers of specialism. A young girl who had an offer of marriage she wished to accept submitted the matter to her father, who did not wish to have her vacate his home, and so advised her against matrimony, using as an argument the quotation from St. Paul, "Those who marry do well; but they who do not, do better." "Well," said the damsel, "I love to do well; let those do better who can." In accepting your invitation, I thought that perhaps I was doing well; probably, by this time, some of you will be thinking that if I had declined, I should have done better. However, I may shield myself under the example of that apostle who, when the lame man at the beautiful gate of the temple asked an alms, replied, "Silver and gold have I none; but such as I have, give I thee." I hope that whenever I meet any of the gentlemen present, it may be under conditions when I shall have as little pain and as much pleasure as on this festive occasion.—THOMAS (REV. R.), *International.*

THINGS PROSTHETIC.

In ninety-nine per cent. of mouths the center of the palate is hard and unyielding, in fact the only portion of the upper jaw which does not change from absorption or yield to pressure. Unless provision is made for it the plate will sooner or later rock. This should be remedied by a "relief" in metal plates, of a thin film of wax on the model, extending well up on the anterior portion to near the margin of the process, and to within a quarter of an inch of the rear of plate. In a rubber plate the relief can be made by burring or scraping the plate.

There are more failures in artificial dentures from *faulty articulation* than from any other cause. To guard against this, in adjusting a denture in the mouth, see to it that none of the six anterior teeth touch,—in fact leave a margin of space. This will prevent the tilting of the plate from the rear. Be sure the bicuspids and first molars on both sides meet uniformly; have no pressure on the second molar, and especially if the lower occluding molar leans forward, as it would crowd the denture forward.

In arranging the *lower* teeth, commence with the second bicuspid so as to insure a perfect interlocking of the cusps. The fronts must be accommodated to the space allotted to them by crowding or overlapping, if needed.

In ordering teeth from the dealer, see that bicuspids and molars are provided that have a good length of porcelain *abovo* the pins, so that if necessary to grind, in articulating, the porcelain will not be ground away. The teeth will also present a more natural appearance. Insist upon this from your dealer.

If you desire to restore the expression of the mouth which has been sacrificed by the extraction of the cuspid teeth, remember this invariable rule, viz: the plate can and should be worn higher over these teeth than elsewhere, and the artificial gum made fuller. Leave the necks of the cuspids slightly fuller than the other teeth. Finish the rubber with a festoon around the necks of the teeth.

In selecting teeth for metal plate and crown work, if you desire *strength*, use the perpendicular rather than the cross pins, and they are less liable to crack in soldering, and do not let your dealer give you anything else.

In polishing metal work, use *oil* with your pumice both on the felt and the brush. To reach all the depressions and interstices, drive a pine stick into the lathe chuck made for it and with a sharp knife turn it to a blunt point.—HASKELL (L. P.), *Ohio.*

THE "GOLD CURE" TRICK.

Having not long since a patient under our professional care who had twice taken the Keeley cure for intemperance, we had an opportunity of obtaining some authentic information which may be of interest to those who have faith in this method, of whom we hope there are few among our readers.

The first visit of this patient he described as quite successful. He was given full permission to drink all the whisky he desired, but was requested to ask for it whenever he desired it. His appetite for liquor held out for a few days, but he soon found that whenever he took it he shortly afterward became very sick, and consequently soon acquired a disgust for it. At the end of a few weeks he returned home, but in a short time found himself as much a slave to liquor as ever, and he soon found that the old appetite was as strong as before.

Returning to the "cure," by request of his friends, his experience was not so successful as before. He took notice on his previous visit that the nausea and vomiting apparently induced by the liquor followed very quickly after he had received a hypodermic injection. He soon became convinced that this injeciion was of a different nature than that which he received on occasions when he did not ask for liquor, and that whenever he asked for liquor the injected fluid was taken from a different bottle than at other times. He accordingly declined to take the "dope," as it was called, and found that he was able to drink as much liquor as he pleased and without any other than ordinary effect.

According to the statements of a physician who was for some time connected with one of these institutions, the so-called "dope" is simply a solution of apomorphia, a most powerful emetic.

The nature of the trick played by these men on their patients is very apparent. Whenever the patient asks for whisky, they give him whisky, but with it give a dose of apomorphia; the patient believes it is the whisky which makes him sick, and as long as he carries this idea in his mind he will not take it. It is evident that the so-called "cure" produced by these methods is simply a mind cure, and is no more effective than mental impressions made in any other way. Hypnotism and various other modes of making mental impressions have been employed for the cure of inebriety, and with a considerable degree of success, but success attained in this way is necessarily uncertain and temporary. The only means of permanently curing an inebriate is to restore his mental and nervous equilibrium and reinforce his will.—*Bacteriological Review.*

GUTTA-PERCHA IN CROWNING.

The teachings of Dr. Flagg and his followers, while perhaps going farther than could be generally recommended, have at least been instrumental in establishing the value of gutta-percha in its capacity to withstand the action of the acids of the mouth and as a preservative agent against caries even where every other filling material would fail; its only disadvantage being that it wears away too readily in exposed positions; but while its good properties are of the first importance in crown work, the softness does no harm, because it is protected from wear and will not disintegrate. The advantage may be summed up before proceeding to more detailed description under the following heads:

First. It is impervious to acid secretions or bacterial influences.

Second. Not irritating to surrounding tissues.

Third. Easily removed when necessary.

As against these three there is simply one consideration, viz: the difficulty of adjustment.

To one accustomed to use cement for this purpose, the difficulty of applying gutta-percha as a substitute seems almost insurmountable; but a moments recollection of the trials attendant upon the setting of his first crowns will recall the fact that cement, too, had its difficulties for the beginner.

For gold crowns, where teeth are covered entirely, I prefer the red gutta-percha we get in form of sheets. It has a degree of toughness that is valuable, but for anterior crowns with open faces the red line at the edge of the openings is undesirable, and I therefore use some white preparation that softens at a low temperature, as this property greatly facilitates its handling in the mouth. There being no danger to apprehend from wear, hardness is not so desirable as for filling.

It is my method to heat both crowns and setting-material upon a tray to protect from the open flame, spread with warm instruments a thin coating over the inner surface of the crown, which should be first roughened on the inside by scratching with an instrument, aiming to have nearly the exact amount necessary as possible, but depending upon a vent to get rid of a small amount of surplus; then after drying the surface of the teeth with alcohol and warm-air blast, wipe with some suitable germicide, saturate a pledget of cotton in eucalyptus, coat the surface with it to prevent the too rapid drying of the chloro-percha, of which a thick solution is then applied around the neck, so that when the crowns already heated as hot as they can be handled in the fingers, and prepared as described are driven home, the eucalyptus, chloro-percha, and gutta-percha in the crowns will form a thick, creamy mass that will penetrate and perfectly fill every space about the necks, and even if surplus be not removed afterward, will not cause irritation as might a particle of cement in the same position.

Sometimes too much gutta-percha will prevent the crown going quite into the proper position, just as sometimes happens with cement; but the remedy is much simpler, because easily removed while still warm ; or if, for accidental or other causes, removal be desired afterward, hot water or hot air applied will in a short time heat the metal sufficiently to soften the material and facilitate the separation without the necessity of damaging the crown, and anyone who has tried to pull them off without first warming will be quite satisfied that any properly adjusted crown can be securely held in this manner.—BROWN (G. V. I.), *Ohio.*

LIABILITY FOR DISMISSAL OF PATIENTS.

The liability of a physician in dismissing a patient was passed upon by the Supreme Court of Iowa, in the case of Mucci vs. Houghton, decided January 17, 1894.

This was an action brought to recover damages for alleged malpractice. The former had sustained a fracture of his left arm between the wrist and elbow. Both of the bones of the arm were broken. He employed the doctor sued to reduce the fracture and treat the injury. The latter at first bound up the arm in splints, and afterwards incased it in a plaster cast. After giving attention to the injury for a little less than two months by examining the condition of the fracture the cast was removed and the surgical attention ceased. The ground of the complaint was that the doctor treated the injury so unskillfully that when the treatment ceased the injury was not cured, but a false joint was created between the elbow and wrist at the place of fracture. There was a trial by jury and a verdict and judgment for the party suing, which is affirmed by the Supreme Court on appeal.

One paragraph of the trial court's charge to the jury was as follows: "If a physician or surgeon be sent for to attend a patient, the effect of his responding to a call, in the absence of a special agreement, will be an agreement to attend the case as long as it needs attention, unless he gives notice of his intention to discontinue his services, or is dismissed by the patient; and he is bound to exercise reasonable and ordinary care and skill in determining when he should discontinue his treatment and services. If you find from the evidence that the condition of the patient's arm is due to his having been dismissed when he ought not to have been dismissed, the defendant would have been liable, unless the evidence further satisfies you that the defendant, in dismissing him, if he did dismiss him, used ordinary and reasonable care and skill in determining when to dismiss him; and, if he dismissed him under a mistaken judgment, he would be liable, and you should hold him liable unless you find from the evidence that, in making up his mind to dismiss him, he exercised reasonable and ordinary care and skill he had regard for and took into account, the well-settled rules and principles of medical and surgical science."

It was argued that the last part of this instruction required a greater degree of diligence and skill than the law imposed upon a physician and surgeon in the practice of his profession. He was required by the instruction, in determining whether his patient had so far recovered as to require no further medical or surgical attention, to exercise reasonable and ordinary care and skill, and to have regard to and take into account the "well settled rules of medical and surgical science." This the court holds was not erronous, especially as the jury were told in another part of the charge that the law required a surgeon to have and exercise the average and ordinary skill possessed by members of his profession in his locality.

It may also be noted that in this case it is further held that it was not improper to permit the plaintiff, as a witness to state in general terms that he complied with the instructions given by the doctor, as it would not be practicable for him to state what he was told do, and then relate the particulars of what he did.—*Woman's Medical Journal.*

IMMEDIATE ROOT FILLING.

Dr. Clifford: It is evident that we do not all agree upon the subject of immediate root filling, and I believe, with the essayist and Dr. Black, that just so long as *incorrect* practices are in vogue just so long should this question be discussed. I am one of the advocates of the preparation and filling of root canals at one sitting, *when the experience, judgment and skill of the operator is sufficient to enable him to property select his cases.* Five minutes (the time allowed in this discussion) however, is scarcely sufficient time to present either side of such a question ; it will therefore be impossible for me to enter into detail and I fear my views will be misunderstood. I always say to those with whom I come in contact, especially the young men, that I approach the subject with fear and trembling. The indiscriminate filling of root canals at one sitting is, of course, a dangerous practice, and especially so with those whose fingers, eyes and noses, I might say, are inexperienced. I believe that roots, where the anatomical conditions are normal, where no acute inflammation exists and where the moisture can be wholly and totally abstracted, whether with or without fistulous openings, can be put in a condition to safely receive a filling at one sitting better than at twenty. A tooth where the apical foramen is largely opened and where necrotic tissue exists in the apical space, of course would be placed on the doubtful list. However, in the treatment of these conditions the root canal is not a necessity and I prefer treating the same through other channels. As to the injustice to our patients in the risks taken, I believe it will compare favorably with the injustice done them in demanding so much of their time and money when repeated visits are required. In my practice, I place importance on constitutional treatment; I believe that *even nature* can be assisted, and I believe that she demands our efforts in that direction at times. Just so long as we regard the dental organs as masses of inorganic matter placed within inorganic receptacles (as some seem to do), and place no confidence in nature's power and disposition to return to the state of health, just so long will we be mechanics and tradesmen in the true sense of the terms, and fail to recognize her efforts at regeneration and the accompanying symptoms necessary to the building up of new tissue, or the eradication of a pathologic lesion.

Dr. Newkirk: I desire to place myself on record as opposed to the doctrines which we have just heard enunciated by Dr. Clifford. About ten days ago a lady came to see me, who had been suffering for some months with facial neuralgia. There were two large amalgam fillings, one in the first upper molar, the other in the second bicuspid adjoining. The teeth were both tender upon pressure and tapping, and the fillings seemed to be imperfect. On removing these fillings the canals of both teeth were foul, stinking. Now, what kind of practice would it have been for a man of good sense, as I hope I am, to fill those teeth immediately? I cannot conceive of any greater folly in practice than that would have been. I did not even attempt to clean out the canals of the roots. I simply opened the main chamber and injected a mixture similar to what Dr. Black mentioned, namely, wintergreen, 4 parts, oil of cassia, 1 part, and carbolic acid 1. Sometimes I use the oil of cloves. I treated the patient at that time and once since, and to-day at the third sitting I filled those roots and crowns, feeling certain that they are in an aseptic condition. The external cavity had been stopped a week without the slightest uneasiness resulting, and I felt perfectly safe in filling the teeth. I cannot see the sense of taking unnecessary risks. What is the object in compromising the safety of our patients, our own reputation, our own consciences by taking risks of that sort? I am not in favor of immediate root filling, with rare exceptions, where the patient might be going away and could not get treatment. I am not in favor of immediate root filling in cases where I remove the pulp myself, even in the most favorable cases for that kind of practice.—*Review.*

THE EARLY WOMAN IN DENTISTRY.

Somewhere back in the early part of the 50's, to be accurate, in the fall of 1859, there appeared in the western horizon a cloud "not as big as a man's hand," for it was the hand of a young girl risen in appeal to man, not for charity, but for the opportunity to enter a profession where she could earn her bread not alone by the sweat of her brow, but by the use of her brain also.

The cloud though small was potentous. It struck terror into the hearts of the community, especially the male part of it. All innovations cause commotion. This was no exception. People were amazed when they learned that a young girl had so far forgotten her womanhood as to want to study dentistry. After a lapse of almost thirty-five years it is impossible to give a just conception of the bitter opposition and the foolish objections that Lucy Hobbs had to meet and overcome.

The main objection was that her place was at home, taking care of the house. They forgot, nay worse, some of them did not care, that she had no home—and that was the main reason she wanted to learn dentistry. The search for a place to study began. She went from office to office. Some were afraid their character would be ruined if it were known that they had a lady student, forgetting that nine-tenths of their patrons were women. One was kind enought to let her come and clean his office and look on while he worked, if she would not let anyone know that she was learning. This she indignantly refused She was willing and anxious to work, but she was a self-respecting woman. Nothing daunted, she kept on until nearly every office in Cincinnati, Ohio, was besieged. At last she was successful. Dr. Samuel Wardle, a large-hearted, Christian gentleman, gave her a place in his office, on the same footing as other students. To him alone belongs the honor of making it possible for women to enter the profession. He was to us what Queen Isabella was to Columbus; may his name, like hers, be revered by every woman in the profession.

No pen can portray the toil and privation of the next few months. In a little attic room the nights were spent with the needle, earning a few pennies for the morning meal; the days, incessantly toiling at a new and strange task. A previous study of medicine made the study easy, but there was much other hard work connected with an office experience. It required all her Yankee perseverance and pluck to hold on. Days, weeks and months rolled on. She was prepared for college. In March, 1861, she made application to the Ohio Dental College for admission. Such boldness in a woman shocked the professors of so respectable an institution. Of course they refused.

Dr. Wardle advised her to commence practice without a diploma, as a large majority of the male practitioners of that time were not graduates. She was thwarted but not defeated, for she then fully determined never to rest until dental colleges were open to women.

She opened an office in a room in a little plain building on Fourth Street, Cincinnati, Ohio. She was of good courage even though the pittance left after the rent was paid was very meagre—only twenty-five cents per week, at times, kept her from starvation.

The war commenced that April. Business was paralyzed. A penniless girl could not live where old practitioners failed. So she went to Northern Iowa. A friend helped her with money to pay her fare. She opened an office. Many called from curiosity. Little by little her practice increased. The first year she made her expenses and one hundred dollars, which paid for her dental chair. The beginning of the second year found her equipped for business.

There are passages in all lives where it would be well if all books were closed. Words never explain the heart-aches. Such a one is the lone fight of a young girl, against the whole world. Justice comes so slowly.

With the same steadfast purpose she pushed on. The second year brought reward, as the world reckons it. There was a three thousand dollar balance on the other side of the ledger. From that time on the sky was brighter. The silver lining began to show, and a confidence born of success took the place of sadness. Her reputation widened until all Iowa knew of *the woman that pulled teeth.*

The Iowa Dental Association was composed of grand, just men. Through their President, Dr. L. C. Ingersoll, they sent her an invitation to attend their convention. It was with many misgivings that the best frock was donned, the office closed and the invitatation accepted; but one grasp of the hand of the president dispelled all alarm. Professional recognition after six years struggle was a balm for many old wounds. The by-laws were changed to meet the case, and the woman dentist was made a member of the association. Then the battle commenced in earnest—the woman dentist with her well-filled purse and the State of Iowa to back her, was a different person from the penniless girl with an over-weening ambition to do men's work.

She was sent with the Iowa delegates to the American Dental Association assembled at Chicago; and there met the professors of numerous colleges. The Iowa dentists made a formal demand for her admission to college, supported by a threat to withdraw the influence of the State from the one that refused it. The Ohio Dental College granted the request, and she entered the same fall.

Many misgivings were felt by her woman friends who feared she could not stand the strain. But she went through with credit to herself and womankind. Professor J. Taft, now of the Michigan State University, then Dean of the Ohio Dental College, wrote in 1886 to the editors of the History of Woman's Sufferage concerning Miss Hobbs: "She was a woman of great energy and perseverance, studious in her habits, modest and unassuming; she had the respect and kind regard of every member of the class and faculty. As an operator she was not surpassed by her associates. Her opinion was asked and her assistance sought in difficult cases, almost daily by her fellow students. And though the class of which she was a member was one of the largest ever in attendance, it excelled all previous ones in good order and decorum—a condition largely due to the presence of a lady. In the final examination she was second to none."

Dr. George Watt, Professor of Chemistry in her Alma Mater, writes of Dr. Lucy Hobbs Taylor, "She is a credit to the profession of her choice and an honor to her Alma Mater. A better combination of modesty, perseverance and pluck is seldom if ever seen."

So the first battle was fought and won. But mark the contrast between the close, conservative East and the broad, generous West. The eastern professors wanted to change their by-laws so that the women could not attend their associations. The western professors attacked them through the dental journals and they had to yield the point. Then and there woman's recognition in the dental profession was made complete.

For eight years Dr. Lucy Hobbs Taylor, was the only woman dentist in the warld. But the dental journals relating her experience crossed the ocean. By these the desire of a German woman in Berlin to study dentistry strengthened into purpose, and Henrietta Hirschfield crossed the waters for the opportunities her native land denied her. She came to Philadelphia, supposing that all colleges were open to women. She was disappointed. However, *she* had wealthy friends who were also influental, and admission was reluctantly granted by the Pennsylvania College of Dental Surgery, from which she graduated in 1869. She returned to Germany and has been a successful practitioner, as well as a noble woman.

Shameful as it is to relate, the truth is that the students, at first, were very ungentlemanly in their treatment of Miss Hirschfield, but they were finally won by her worth, and ladylike deportment. As late as 1872 and 1873 women were mistreated at this college. But that time has passed and most dental colleges in the United States admit women.

The struggles of these first women opened the way to a lucrative profession now practiced by several hundred women in the United States, as well as by a large number in foreign countries.—TAYLOR (Lucy H.), *Register.*

DROPS vs. MINIMS.

The terms *gtt.* and *m.* are often used synonymously and interchangeably when in many instances there is a wide difference between them.

A *drop* is usually considered a *minim*, or one-sixteenth part of a fluid drachm. This is true of water and some other liquids; yet drops of the same liquid vary under different circumstances.

Let us enumerate a few of the things that modify the size of drops. Specific gravity is one. The heavier the liquid, the smaller the drop, and the greater the number in a given measure. For instance, a drop of chloroform, which is a very heavy liquid, is small; smaller than one of ether or alcohol. Again, the shape of bottle, or other container, modifies the size of the drops; those from a thick-lipped bottle being larger than those from one with thin lips. The broader the surface from which drops fall, the greater their size. Drops from a full bottle are usually smaller than from a bottle partially emptied, owing to rapidity of movement.

Viscidity, or adhesiveness of the liquid to the sides of the bottle, requiring, as it does, a greater mass to overcome it, augments the size of the drop.

The greater the mobility of a liquid, the larger the drop.

In measuring liquids by drops, it is best to use a glass medicine dropper and not depend upon the uncertainty of droppihg from various shaped bottles.

The following list will serve the purpose of showing the relative difference between drops and minims of a few of the drugs employed by the dentist:

NUMBER OF DROPS IN SIXTY MINIMS.

Carbolic Acid	111
Sulphuric Acid	128
" " dilute	60
Aromatic Sulphuric Acid	146
Ether	172
Alcohol	146
" dilute	137
Aqua dest	60
Aqua Ammonia	64
Chloroform (purified)	250
Creasote	122
Fl. Extract Ergot	133
Glycerine	67
Liq. Cloride of Zinc	89
Oil Cajuput	134
Oil Cloves	130
" Cinnamon	126
" Wintergreen	125
" Menthe pip	129
" Sassafras	133
" Terebinthinæ	136
Aromatic Spirits of Ammonia	142
Spirits Camphor	143
Syrups	65
Tinct. Aconite	146
" Benzoin Comp	148
" Digitalis	128
" Chloride of Iron	150
" Opii	130
Vin Opii	100

—EDITOR, *Ohio.*

AN INTERESTING CASE.

Have just removed from the mouth of Miss B. M—, who is eleven years of age, the first superior temporary cuspid on the left side. The incisors, bicuspids, and first and second molars, all of the permanent set erupted; this is the only temporary remaining. The permanent cuspid was about one-half of the crown through the gum, about one-fourth of an inch posterior to the lateral incisor of that side, somewhat turned on its axis, and had grown and erupted in such a way as not to come in or near the root of the temporary cuspid, as a result of which the root is intact, not a particle of absorption or wasting of the root having occured, showing very clearly that the coming of the permanent tooth exercises an influence in the removal of the roots of the temporary. There was no disease of the gums near this tooth nor of the other teeth in the mouth; everything seemed to be in a state of perfect health so far as the gums and sockets of the teeth were concerned. I have seen many such cases, but have never yet seen an instance in which the roots of the temporary teeth were absorbed when the corresponding permanent tooth was so far out of place as to have no influence upon the temporary. If in any case the roots of the temporary teeeh have been found absorbed under similar conditions, or in the absence of the permanent teeth, we would be thankful to be advised of the fact.—EDITOR, *Register.*

EDUCATION IN CHICAGO.

The colleges of Chicago seem to have been outdoing themselves too. The Chicago College has completed its new building on the "West Side," and is occupying it. The faculty and students are enjoying their new home immensely, and claim to have one of the best, if not the best dental college building in the United States. The Northwestern University Dental School also has some new and very complete rooms in the new medical building of the Northwestern University, to which they point with considerable pride. The faculty are much elated over the increase in attendance and in the grade of the students who have applied for admission this year.

The American College, with several prominent additions to its faculty, has sought more extensive surroundings and is congratulating itself on its increased growth. Its increase in attendance has been phenomenal. The number of students has more than doubled, making a total of 278, and this in a year of scarce money —*Ohio.*

ILL-FITTING DENTURES.

In reply to inquiry the *Register* says editorially that affections of either an inflammatory or neuralgic character may attend or follow improper or unskillful operations upon the natural teeth, as has been witnessed in many instances. It is frequently the case that inflammatory conditions are occasioned by ill-fitting plates; neuralgic affections do not often occur from this cause, but sometimes do.

In a recent case in which a continuous gum denture for a lower jaw had been inserted, though no abrasion or inflammation was anywhere apparent, yet when the piece was placed in the mouth, though to all appearances a well-fitted plate, there was severe pain after it had been worn a short time, so that its use had to abandoned, and return made to the old plate, which was much less perfect in its adaptation.

We have known a few cases of this kind; they do not, however, often occur.

Inflammation of the mucous membrane and soft parts of the mouth is of very frequent occurrence from ill-fitting plates; usually this occasions complaint and remedy, but in many instances the irritation comes on so gradually and almost imperceptably as to inure the patient to the inconvenience till now and again serious conditions are established.

Another inconvenience that is experienced by this wearing ill-fitting plates, is defective mastication and insalivation, and a corresponding inefficiency in the digestive and nutrient processes.

This is a subject to which far more attention should be given by our profession than it has hitherto had. We trust this suggestion will elicit such attention us will cause every such case to be investigated and studied.

A LA OTTOLENGUI.

One member of the profession in Chicago has been distinguishing himself in other fields beside that of dental literature. A novel, the scene of which is laid on Canadian soil, is the product of his pen. The press notices must be exceedingly gratifying to the author, for good things have been said about the book all along the line. Chicago dentists will not permit themselves to be outdone by New York, even in the matter of authorship of novels.—*Ohio.*

TREATMENT AND EDUCATION OF CLEFT-PALATE PATIENTS.

After a somewhat lengthy experience, I am convinced that not more than one person in ten wearing an artificial palate (and I use the term now indiscriminately for both classes of instruments), having passed the age of childhood before its introduction, will *of his own volition* attain such perfection of articulation and enunciation that he does not betray his defect ; while I also know that there are innumerable instances of persons who have reached mature age before they began their work of correction, who, *under proper instruction* and with perseverence, have attained absolute perfection.

The imperative need of instruction was recognized by me in the earlier part of my practice, and from time to time I referred patients to teachers of elocution for help. The result was not always satisfactory. Most of such teachers placed more importance upon *elocution* than upon *articulation*, and although some of the pupils made wonderful progress in articulation, I was not altogether satisfied with the methods of instruction.

For the last ten years or more there has been associated with me in my practice a lady who possesses, besides other accomplishments of education, a vocal and elocutionary training. She conceived the idea of formulating a system of teaching articulation to cleft-palate people which might be denominated "a system of vocal gymnastics," based upon the methods used in teaching elocution and in teaching deaf mutes to articulate. Her system is not one of fixed and rigid rules. It is not one that could be taught in books, but it is one of general principles, varied in its application to the idiosyncrasies of each case.

As the result of having such an able coadjutor, of late years I have insisted that it would be almost useless for me to make an apparatus for any patient unless my work could be supplemented by proper instruction ; and, furthermore, I have carried this denial to the extent of refusing to make an apparatus for any one whose apparent mental condition showed an incapacity for study and improvement.

The results under such tuition as indicated have sometimes been rapid and marvelous.—Kingsley (N. W.), *Cosmos.*

SECRET PREPARATIONS.

What shall be said of the men who lend their names to imposture; who over their own signatures certify to the merits of preparations of which they can know nothing? Perhaps they may urge that they have tried these nostrums with good results. This is but a plea for empiricism ; for experimentation upon people whom they have in the most solemn manner engaged to defend against such practices. Some of the men — shame upon them — are, as our correspondent urges, themselves teachers, and therefore doubly bound to pursue a more honorable course. Let such false teachers be marked by every professional man as unworthy their position, blind leaders of the blind, whose destination is the ditch that they deserve.

There is but one honorable course for anyone who considers himself a professional man, and that is, when the secret preparations are urged upon him to demand the formula—not a mere list of drugs which are said to be the components, for the man who will for gain offer to professional men a secret preparation will not hesitate to preserve his secret by prevarication—but a working formula giving the proportions used, and in the event of a refusal, to denounce the quack who would prevail upon him to forfeit the confidence reposed in him by his patients, and prove himself as conscienceless or as unprofessional as his tempter.

As these preparations for obtunding sensibility are almost, or quite, invariably dependent upon cocaine for their results, we publish on page 54 a formula that has the approval of eminent chemists and that has been used by dentists of knowledge and experience, that is better than any of these secret nostrums, and that will enable the practitioner to keep faith with his patients by prescribing and using only that of which he has some knowledge.—Editor, *Practitioner.*

NIGHT GROWTH.

It is a curious fact that night is the time which nature utilizes for growth. Plants grow much more in the night than in the daytime, as can be proved any time by measurement. Measure a vine at night, then measure it again in the morning and the next night, and it will be found that the night growth is two or three times that accomplished during the day. During the day the plant is very busy gathering nourishment from various sources, and during the night this raw material is assimilated into the plant life.

The same fact is true of the animal creation. Children grow more rapidly during the night. In the daytime, while the child is awake and active, the system is kept busy disposing of the wastes consequent on this activity ; but during sleep the system is free to extend its operations beyond the mere replacing of worn-out particles ; hence the rapid growth.

This is why so many invalids need so much rest and sleep. The system has been taxed for years beyond its ability to repair the tissues, and hence the organism has become worn and disabled from the accumulation of waste products, and disease has resulted. With the proper conditions restored, and a season of perfect rest, nature will reassert herself, clearing up the clogged and dirty tissues, and restoring the organs to their normal condition.—*Good Health.*

TO PROPERLY ARTICULATE A SET OF TEETH.

Having to make a full upper set of teeth, we will suppose the impression and model to have been made in the usual way. Take modeling composition, soften and flatten it out until it is about a quarter of an inch thick ; press it on the model while warm, and then cut and trim to make a trial plate for the purpose of taking a bite. It should accurately fit the model. Melt a little wax around on the ridge, then press a roll of softened wax on that, and trim to what you think would be a sufficient length, then try in the mouth and carefully trim the lower edge to the proper length for the teeth ; if it is not, either add to or cut away until it is found by trying in the mouth that the wax represents the proper length. This wax should be so cut on its articulating surface that all the lower natural teeth will strike it at the same time when tried in the mouth. Now remove and soften the articulating wax surface just a little over the flame, then replace in the mouth, and do not let patient bite into it until you have the head drawn well back so as to put the anterior muscles of the neck on a stretch ; then have the patient bite a little on the wax just to get an impression of the cusps and cutting-edges of all the lower teeth. Next take an accurate impression of the lower teeth, from which make a plaster model, which will fit into the slight impressions of the teeth made in the bite taken, and then place the whole on any good articulator which can be set to maintain the relative positions. Remove the bite, and you are ready to set the teeth to a correct articulation, and if all has been carefully done the teeth will come together properly without any subsequent grinding.

For a double set (upper and lower) make trial plates of modeling composition to take the bite on, putting a piece of rather stiff wire in the lower one to stiffen it. Wax the ridges as previously described. Place a roll of softened wax on the upper trial plate, place the lower trial plate in the mouth, being careful to see that it is in its proper place, and hold it there while putting in the upper plate with the wax on it. Do not allow the patient to bite until the head is drawn back as far as you can get it; then tell the patient to bite, and then keep the jaws closed until with one finger the wax has been well pressed on the trial plates. Mark the center or median line on the wax. Have patient close the lips, and then take a small, straight instrument and mark on the wax the height of the lower lip. This mark should extend from one angle of the mouth to the other; you then have the line of fissure or line of lip-closure; in other words, the height of the lower lip and length of the upper to serve as a guide in making the wax models. After thus taking the bite, place each of the models in the bite so obtained, and fasten in any good articulator; then prepare corresponding wax models, which should be tried in the mouth to verify their correctness. They should come together in the mouth the same as on the articulator, and if they do not they should be made to do so before proceeding further. Take pains to be satisfied that the wax models are correctly adjusted and give a natural expression to all the facial features, observing that the lower third of the wax model is in proper proportion or length with the upper two-thirds, and be sure to produce the proper fullness over the region of the upper cuspids to give as near as possible the natural contour. Then take the upper and lower plaster models off the metal articulator, and make a plaster extension to the back part of upper model, on which place the wax models, which have been marked while in the mouth so that they can be put in the same position out of the mouth. The lower plaster model is placed in position, and a plaster extension added to fit to that of the upper plaster model. After separating these, the lower wax model is placed on the lower plaster model, and the inside space filled with wet paper, and plaster is poured over all to make the lower articulating plate to which the lower teeth are to be set. Next place the upper model in position, and set the upper teeth to the lower ones which have just been set to the lower articulating plate, and when ready for flasking, if for vulcanite plates, saw off articulating ends. Always set the lower teeth first.

Having made double sets in this way for twenty-five years without having to do any grinding after placing them in the mouth, I think that I have some claim to the conclusion that this method is a pretty good one.—TEMPLETON (J. G.), *Cosmos.*

LOST AND FOUND—BANK NOTE BACILLUS—STRANGE INSECT.

[TRANSLATED FOR THE ODONTOGRAPHIC JOURNAL.]

A periodical of Havre relates that at the end of the first act of "The Pirates of Saranac," recently performed in that city, one of the actors came forward and requested the audience to keep still while search was made for the artificial teeth of a lady in the balcony, who had, while laughing, dropped them into the pit. They were found, after quite an extended search, and restored to the owner, who continued to enjoy the play to the end.—*La Odontologia.*

Acosta and Rossi have been studying the notes of the Bank of Havana from a bacteriological point of view. They have proved that the weight of the paper augments considerably in the course of circulation, by accumulations of various sorts from handling, and the filthy state at which they arrive is prolific soil for bacilli, some nineteen thousand being discovered in two observations. One which appeared to be especially characteristic, was called the bank note baccillus. It is septic and caused speedy death to Indian rabbits inoculated therewith. The bacilli of tuberculosis, of diphtheria, the streptococcus of erysipelas, and various other pathogenic species, were encountered.—*Cronica Medico-Quirurgica de la Habana.*

A strange insect exists in Popeyan which perforates lead as easily and in the same manner as the wood louse does wood. It belongs to the coleoptera, family circulini, and as it is believed not to be classified, the name Circulinus saturninus is proposed. Specimens have been obtained of the insect and the perforated lead. — *La Odontologia.*

ADVERTISING DENTISTS.

Young graduates are apt to become very impatient that practice does not come to them immediately, and are sorely tempted to take up the methods of trade and advertise for business, under the impression that this is a short cut to prosperity. Let such look around them and see how many have gained by such methods. Count up the advertising men who have attained a permanent success, from any standpoint. They may seem to flourish for a while, but is it not the fact that they almost invariably become disappointed men ?

Of course they cannot secure an established position in the minds of intelligent men, for advertising is known to be opposed to all real professional spirit. The clientele of an advertising dentist must be made up of the poorer class of people, who are ignorant of professional relations, and who never become permanent patients. As soon as the loud advertisements are stopped, or when some other dentist with a new kind of attraction makes his advent, the old one is forsaken and drops into poverty. If any misfortune overtakes him, or if he has passed the most energetic period of his life, he has no established practice, no old families upon whom he may rely, because his clientele has been made made up of transient people, the poorer class, the least intelligent. He must always accept low fees, and his profits are swallowed up in advertising. Hence it is that the unprofessional dentist almost invariably comes to grief sooner or later. The only way to succeed financially as well as socially, is to keep within professional lines, and by steady perseverence to get the settled confidence of the community.—EDITOR, *Practitioner.*

INJURIOUS EFFECTS OF AMALGAM FILLINGS.

What, then, is it that exerts an injurious influence upon the system and proves the obstruction to the proper action of a carefully selected and indicated remedy in the treatment of disease ?

That it is the mercury alone which is used to effect an amalgamation of one or more metals in a finely divided state, physicians of both the two great schools of medicine are all agreed ; and the claim is often made—more especially by the homœopathic physician—that the indicated remedy given for any diseased condition or disturbance of the vital force often fails in its curative effect when there is apparently no good reason in view for its so doing.

Now, the physician who practices medicine in strict accordance with the teachings of Hahnemann knows that every disease, be it acute or chronic, should yield sooner or later to the action of the one and only one right remedy ; and knows still further that no two medicines when mixed together can act in harmony in restoring to the vital force its normal equilibrum any more than two plants growing side by side in the same soil could become associated together without discord—that is to say, every drug or medicine has a distinct individualty by means of which it alone is capable of successfully attacking a given set of symptoms and restoring the natural harmony among the organs and tissues of any part of the system in which such harmony has been disturbed.

It will be seen, therefore, and can be proven by anyone who questions this fact, that the action of an indicated medicine or drug will be only partially successful at times in its curative action, for the reason that there is another drug which is counteracting the effects of the prescribed remedy. In other words, the patient being one who is peculiarly susceptible to mercury is continually getting what are termed *provings* of the drug, and the physician derives about as much satisfaction in the treatment and cure of his patient as does the one whose practice it is to give one or more remedies in alternation, believing that if one does not do the work, the other or both in combination may.

The physician accordingly instructs his patient to go to the dentist and have the fillings removed. The patient, valuing his health, obeys in spite of the assurance generally given that it is all bosh, humbug, or nonsense to rely upon such advice.

What is the result of their removal? Chronic diseases which have hitherto failed to yield to treatment begin at once to yield more quickly and permanently to the action of the medicines. The patient is quick to perceive the improvement in his general health, likewise the family and friends. The action of each new drug which is prescribed as the character of the symptoms change advances the patient steadily on to renewed health instead of having but a temporary effect for the better, only to allow him to slide back to where he originally was, as was the case before the amalgams were removed.

Circumstances and associations the past year have been such as to compel me to investigate for myself, and to frankly acknowlege, as I have not been able to do hitherto, that a marked improvement in the patient's condition almost invariably followed the removal of the amalgams, and that the action of the medicines upon the disturbed vital force was much more marked and effectual following such removal than what it was before.

How, then, it may be asked, do you account for the very frequent desired action of the indicated remedy in the treatment of a patient whose teeth *have* one or more amalgams, while in the treatment of other patients whose teeth are similarly filled the indicated remedy fails? And this brings us to the point I wish to emphasize—

namely, that all persons are not susceptible to the same drugs at all times nor in the same degree—that is to say, one person may have only to smell of a bottle containing phosphorus, for instance, in the one hundred thousandth or a much higher potency even to get well-marked phosphorus symptoms or provings so called, whereas another person might smell of the bottle all day long without perceiving the slightest ill effect.

Again, one person sleeps for a night in a room the wall-paper of which contains arsenic and gets well-marked symptoms of arsenical poisoning, while another person may sleep in such a room for an indefinite period without perceiving the slightest effect.

Still again, one person passes through or near a bed of poison-ivy with perfect impunity, while another shows soon afterwards unmistakable evidence of ivy-poisoning.

In neither of the above instances is there any of the crude material of the drug taken into the system, and yet no one will deny that there is an altered or perverted condition of the vital force, with symptoms produced by each which could not possibly be mistaken for, or confounded with, those of any other drug.

If it is clear, then, that in neither case is there any of the crude substance to produce the given symptoms, but that the symptoms unmistakably exist, we must face the question, What is it that produces them in either case ? and this brings us to the question, What is the vital force, that unseen and untangible something that constitutes the difference between a live man and a dead man ? Is it a material substance that can be seen with the eye or felt with the hand ? If not, what else can it be but a spirit-like force or substance (as Hahnemann terms it), and which, when becoming disturbed by disease, must be treated with a similar dynamic force rather than with a crude material one ?

When we come to reflect and to appreciate the fact that it is this vital force and not the material organs or tissues of the body upon which the action of medicines is to be directed ; when we have, too, the fact visibly demonstrated to us that a force which can neither be seen, felt, tasted, or smelt, like that which I have just mentioned, and apparently dormant, can so affect the vital force of a person who is peculiarly susceptible to it as to be manifested in plainly-marked symptoms peculiar to that drug and that alone, then we can discard the idea as worthless that because there is apparently no free mercury in an amalgam filling there can consequently be no dynamic effect to retard the action of any drug which the physician finds it necessary to prescribe.

Whenever we deal with potentized drugs of any kind, so far as their medicinal properties are concerned, we are dealing with forces as subtile and powerful as any of the natural or physical forces which govern the universe.

What matters it how small or in what form the substance exists provided its force, apparently dormant or inert, is unmistakably manifest?

An esteemed member of our profession across the Atlantic has declared that his complete abandonment of high attenuations dates from the time when he discovered that he must either give up this method of treatment or avow his disbelief in the atomic and molecular theories of chemistry. Has any one ever seen a molecule of any material substance? Has any one ever been able to prove that when a molecule has been divided and subdivided for an infinite number of times there has been a limit reached to its further subdivision?

We may search as hard to find with the highest powers of the microscope a single molecule of the material substance of aconite and of many other drugs in the third decimal potency as we may to find one in the forty five thousandth potency, and yet the *fact* remains that well-marked and distinctive symptoms peculiar to that drug can be derived as well from one as from the other potency when administered to a person in perfect health and who is peculiarly susceptible to aconite.

In the study of embryology and zoölogy the microscope has given us visible demonstration of the fact that all life is cell-life, and that such life is manifested in many of the lowest forms of the vegetable and animal kingdoms by the existence of but a single cell. Conversely, the study of pathological anatomy, which is but a manifestation of perverted life, or what we call disease, has taught us that all disease is cell-disease. The human body being made up of multitudes of cells, and millions upon millions of them so minute as to be well-nigh invisible with the highest powers of the microscope, it is clear that a medicine in order to reach and affect them must be equally minute, for in order to reach them it must enter them, and to accomplish this it must be smaller than they.

A well-known writer has said that "Food, to be appropriated by the body, must go to the stomach and be digested, pass from the stomach and be assimilated; but that medicine, to be effectual, should not travel this route. Digestion would destroy it. It should be so minutely divided that the open-mouthed absorbents swallow it as soon as it comes in contact with the mucous membrane of the mouth. Thus unchanged it enters the circulation.

"A group of cells in a remote corner of the anatomy are hurt and crying out for help. Help is on the road. Over the trunk-lines, past the way-stations, out on the local road, recognized by every road official *en route*, and hurried unerringly to its destination. No need then of further concern or anxiety. If the doctor has selected well, the drug will reach its destination.

"We may not be able to locate the origin of, or always diagnose, disease to our entire satisfaction, but this need not, does not, prevent intelligent and successful treatment of the sick. Every disease or condition of disease will photograph its appropriate remedy, and every remedy true to the picture will accomplish the object designed. In the midst of doubt and uncertainty regarding exact pathological conditions, we can at least be sure that disease is not an entity; that it cannot be expelled by emetics, cathartics, diuretics, or diaphoretics; that it is wrong life, perverted life, inharmonious, discordant life; and that, while it may be coaxed back into tune and harmony, it will not, cannot, be coerced."

The subject at issue has to deal so closely with the dynamic influence of drugs that I find it difficult to attempt to express myself clearly to those who do not fully understand the meaning of the term and manner in which this spirit-like force (the real medicinal property) of the drug, as Hahnemann terms it, is evolved or set free when the drug is potentized or dynamized.

To all such persons I would suggest that a careful perusal of one os Hahnemann's works, entitled "The Organon, or Art of Healing," will throw much light on may things in my paper which may otherwise seem very obscure.

It is a well-known fact that every drug is capable of producing well-marked symptoms which are characteristic of it when administered either in the highest or lowest potencies to persons in health.

Let all who are inclined to doubt this statement take the trouble to verify it by actual experiment instead of prematurely ridiculing it, as many no doubt will be inclined to do, for I do not expect any one to accept the truth of any statement I may make upon my own *ipse dixit*, or with that "happy blind faith of childhood" which some of my friends across the water declare they no longer possess. When we have proved this to our satisfaction we can then accept the fact that because the mercury has entered into the formation of a chemical compound it has none the less preserved the dynamic force which it and all other drugs possess.

The doctrine of the conservation of energy, which declares that force is never destryed whatever its changes in manifestation may be, is as applicable to drugs and their dynamic action, even though the force is shut up in an amalgam filling and *apparently* inert, as it is to a simple piece of charcoal, which needs but a spark to make more manifest the hidden energy stored up in its compotent parts, and upon the liberation of which may show itself subsequently in manifold forms, such as heat, vapor, gases, and all the compounds both of organic and of inorganic life.

A man who does not thoroughly understand and accept this doctrine as one of the established laws of the universe will not be likely to understand the action or, in other words, the energy of drugs when potentized and the laws which govern it ; for the energy which lies hidden in the mercury of an amalgam filling is none the less potent and subject to these same laws than it is either in its crude state or as a component part of some compound other than an amalgam filling.

I have heard men in our profession deny with the greatest positiveness, without attempting to offer any reason for their assertion, that there can ever be any possible injurious effect or influence produced upon the system by amalgam fillings.

Such men I believe in all sincerity are entirely unaware that mercury is one of the most poisonous drugs and one the most difficult to eliminate from a system which has once been susceptible to its toxic effects. There is surely no other drug, poison, or disease, not even syphilis itself in its worst form, that becomes a more difficult matter for the physician to eradicate from the system. Being one of the most deep-seated and deep-acting drugs, its physiological effects often come under our observation within the field of our own special work.

The least we can do in getting at the truth of the point at issue between the two professions is, first, to study the action of the drug both as to its physiological and medicinal properties ; second, to study carefully the dual action of drugs in general ; third, to study the laws which govern such action ; fourth, the proving of potentized drugs upon one's self with a view to becoming satisfied whether or not there *is* that dynamic action in them and possessing actual curative properties which all who have faithfully studied them know they actually possess ; and, fifth, the bearing of these laws upon the question we are considering.

When I assure you that such has been my endeavor the past year that I might be able to speak without prejudice in writing a paper upon this subject, you will readily understand that I come before you not for the purpose of stirring up personal controversies and seeking besides the disruption of societies, as it was argued I would do had my paper been granted a hearing before the Massachusetts Dental Society, but rather from an earnest desire to contribute my share of whatever may be of help or interest to any man in our profession.

It may be asked, why are not the cement fillings equally injurious, considering their composition?

I reply that there is, in both cement and gold fillings, the same kind of dynamic force, but that it is not of such a poisonous character, nor does it act in either case as such a powerful obstruction to the action of indicated remedies as is unquestionably true of mercury.

I may say right here that I have one patient who is so susceptible to aurum that whenever a new gold filling is inserted in any of her teeth an ulcer invariably appears within twenty-four hours upon the mucous membrance immediately about the tooth and upon the tip of the tongue from the constant touching of the tongue against the filling—the taste of the metal being as plainly evident to the patient as is that of the copper in a copper amalgam filling to patients peculiarly susceptible to cuprum. A glance at the homœopathic materia medica will reveal the ulcerations I have alluded to under the symptoms obtained from provings of aurum.

Among my patients are many sent to me suffering from chronic diseases and complaints of various kinds, with instructions from the physician to remove all amalgam fillings. The scepticism of a large majority of such patients, supplemented by that of their families and friends, that a removal of the fillings would result in any visible improvement in the patient's health has been generally equal to what my own want of faith until recently was, that their was either truth or sense in the statement made by physicians, and I am frank to admit that no person who was familiar with the patient's condition before the fillings were removed, and by a subsequent following of the case to notice the effect, if any, of such removal, could be more amazed than I have been at the improvment which has invariably followed—TAFT (C. H.), *International.*

GLASS FILLINGS.

[TRANSLATED FOR THE ODONTOGRAPHIC JOURNAL.]

I will briefly set forth the opinions and experience which I have accumulated on the subject of glass filling, and demonstrate the process. I have especially chosen this theme, because it is new, and I believe interesting to those who are not acquainted with the subject.

Until the present time, everyone concerned in the making of filling material, has in vain sought one which should meet the requirements in all respects ; one which should restore the carious tooth to what it originally was. One material fails in color, another in durability. Up to date the best filling material we have is gold, but it does not correspond to the natural color of the teeth. Many have certain patients who cannot afford gold; others incline to cement fillings because they more nearly approximate the natural color. Besides, filling with gold is a long and very fatiguing task, injurious to the health of the operator, often compelled to stand two, three, or more hours in a constrained position.

Next to gold, copper amalgam is the most durable material ; but this is objectionable to patients, because of the discoloration it causes, and no one will submit to it in front teeth. Then we have various gold and silver amalgams, used reluctantly, as they always contract more or less, and also out of the question for front teeth on account of their color. Last is Pyrozinc-phosphate, by which we can almost give the natural color, but it is not the material sought for, because of its want of durability.

The newest thing in this department is glass filling, which has already been made use of by several gentlemen, and upon which Dr. Sachs of Breslau has written an article, showing its superiority over all other filling materials.

It will, in every cavity where it can be used, throw all other materials in the shade ; but it is only available for such cavities as can be easily reached and looked into. It is the best thing for labial and lingual surfaces of the front teeth, also for buccal and lingual surfaces of the posterior teeth. It is not desirable for central or approximal cavities, where pressure or suction might loosen the filling ; nor indeed, in the last named cavities, can the necessary accuracy be attained. It should take precedence of all other materials for the front teeth, on account of its good appearance and durability, being especially valuable for the latter quality in cases where the cervical margin of the cavity extends far under the gum.

So far as the process is concerned, it is simple and proportionally short. The coffer-dam is adjusted and cavity prepared, in some sharp-angled form. If the borders are rounded, the glass will not hold firmly. A piece of gold foil is then cut, about the size of the cavity (I use No. 60), and inserted on pincers wound with cotton, at the same time gently rotated. Every impression sharp enough to tear the foil, must be avoided, but accuracy must be sought in obtaining the shape of the cavity, to insure a good and firm filling. The withdrawal of the foil is a most delicate matter, as upon this depends the success of the entire operation. The gold cup so formed, which must exactly reproduce the shape of the cavity, is now filled with the powdered glass previously prepared and mixed with distilled water, and the whole placed over the flame of a spirit lamp until the glass melts, which will require but a short time. As the mass contracts, more glass must be added and melted (usually two or three meltings), until the hollow of the gold is full, and the outer surface of the filling has the form desired. The whole is then allowed to cool and is taken from the gold foil. The greatest care must be exercised, as the least pressure easily injures the sharp angles of the filling. The filling is then tried in the cavity, then furrowed with a corundum disk, and fastened in with cement mixed thin, as if it is too thick the filling will not fit into place.

If the operation is successful, both patient and operator are rejoiced, and by this neat process is many a thankful patient attracted.—M. REICHERT, BERLIN.—*Zahntechnische Reform.*

ARE OUR DENTAL ORGANIZATIONS SATISFACTORY?

The history of dental organizations throughout the world is, probably, very much the same, and it is presumed the record, if such exists, would show that the various bodies have originated through the aggregation of individuals without much or any attempt at classification. In some local societies, of latter years, a certain qualification is demanded, as a diploma from a recognized college or a medical degree. While this condition is an advance on previous loose methods, it does not seem to have helped very much the outcome, for, as a rule, results have by no means been equal to expectations.

Organizations in dentistry have from the beginning followed set lines. The custom adopted from time immemorial in the medical ranks has been the example followed, and that with a persistency that must be regarded as strange, when it is remembered that dentistry arose independently, and should have marked its own path and refused to be a mere copyist of the work of other men and other professions. It was original in most things, but in this respect it began exactly with the old methods, and has not made any marked advance since the first organization was completed.

Less than sixty years ago there was not a dental organization on this continent, the first formed being in New York in 1837. It is true that Dr. Hayden urged the idea as early as 1817, but there was no response to his efforts, and those who can recall the condition of dentistry as late as 1837 can only wonder that at that period any kind of an organization was possible. The dentists of that time surrounded themselves with a wall of exclusion, every man being practically at war with every other man in the practice of dentistry. It is, therefore, not surprising that the two original societies in New York died and left no history.

In 1840 the American Society of Dental Surgeons was organized with Dr. Hayden as president. From that period until the formation of the American Dental Association in 1855 there were but five associations organized—the Virginia Society of Surgeon Dentists in 1842, the Mississippi Valley Association of Dental Surgeons in 1844, the Pennsylvania Association of Dental Surgeons, the Society of Dental Surgeons of the State of New York, and the successor of the American Society of Dental Surgeons, the American Dental Convention, organized in 1855. It would be difficult to number the local, State and National Associations existing to-day, but except in minor matters they exhibit no improvement in their manner of work over those first called into being.

This would seem not to be on the line of progress. It is certainly true that dentistry has made marked advances in the period named. It has progressed very nearly to the standard of a learned profession, and its methods of legislation on scientifc lines should have advanced with a proportionate rapidity.

It may truly be said that the work of building up the theoretical and practical details has been too exacting to permit of any originality in other directions. While this is acknowledged it will not much longer be a valid excuse. The imperfections now existing in society work will continue unless there be an effort made to change conditions and means of labor.

It is certainly true that while dental organizations have been of inestimable value in binding together and liberalizing the incongruous elements engaged in the practice of dentistry, and have proved most valuable incentives to scientific work, the real progress of denistry is exclusively due to the work of individuals and largely independent of any society efforts.

There has been no attempt made, so far as we are aware, to crystallize this isolated scientific element into one body. It remains as it began, without organization and often without encouragement.

The evolution of societies throughout the United States presents a curious state of affairs. They may be classed as local, State and National. In many sections of the country a practioner must travel hundreds of miles to attend a meeting, and in other and more populous districts, as large cities, two and frequently three societies are found working with more or less success.

In the entire aggregation there is no system, if we exclude the State of New York. A few men get together and form a local society ; a few more from different sections of a State organize a State society ; a larger number from the nation develop a national organization. The local society may or may not require the degree for admission. The chords of fraternal labor are drawn closer here than elsewhere, hence we find that local societies practically perform all the real scientific work of the profession.

It is difficult at this date to determine why State organizations were ever deemed a necessity. It is presumed they originated under the idea that each State must be independent of every other State in the confederacy. It is certain that results do not warrant any great efforts for their continuance as a working part of the profession. While these profess to represent the associations of the various Commonwealths, they generally retain that odious clause of permanent membership in their constitutions similar to that of the National Association, than which there is nothing more fatal to representative character or scientific work.

When it is remembered that in eight of the States of the United States these irresponsible bodies have the nomination or appointment of the State Boards of Examiners, and in one State they appoint the majority of the Board, it seems as though the time had come for a reorganization in all directions, but especially should there be a change in the anomalous condition of State matters.

The attachment felt for the organizations supposed to represent the largest constituencies, the American Dental Association and the Southern Dental Association, make it a difficult task to effect any change there, but it must be evident to the members that the work performed by these Associations bears no relation to the expenditure of time and means for their maintenance. It will hardly be asserted that either of them have accomplished much scientific work. In the American there has been a notable and worthy effort the past three or four years in this direction, but every attempt there is hampered by an unwieldy organization, and in the end all results are attained by individual efforts.

The most convincing example of herculean effort without a corresponding equivalent in results has recently been given the world in the Columbian Dental Congress. It demonstrated, as never before, that it is impossible to bring masses of professional men together and in this way advance the standard of scientific knowledge. If dentistry is to develop beyond its present status, other means must be adopted, and we think the time is propitious for at least a discussion and comparison of views as to the best means to accomplish more with less use of dead material.

We think it must be conceded that the local societies, as now constituted, are, probably, the best form of organization, as they come closest to the individual. The State associations should be relegated to oblivion, as they can give no reasonable excuse for existence. The national organizations should be remodelled on strict scientific lines or be dropped altogether as having outlived their usefulness.

While the writer of this does not feel it his duty, even if he be competent, to suggest plans for reorganization, it may not be construed as out of place to offer a personal opinion.

If the individual is to be the unit in scientific investigation, the local society should be the basis of his support. These should be the feeders to a national organization, and there should be nothing between these two bodies.

Representation from the local to the national should be based solely on original work. Mere membership should have no weight in the selection. The national body would then be composed of a limited number, but all would be original thinkers. In this body a similar rule should be enforced compelling a member, during his continuance as a delegate, to present one or more truly original papers upon subjects worked up in the laboratory and not in the brain of the writer. The influence of such an organization cannot be computed. It would in a very brief period change the whole current of thought and challenge the respect of the world.

We do not propose to work out the details of such an organization. To many, doubtless, it will seem utopian, but in the view of the writer of this it must be the organization of the future, and it seems to him that it is the duty of all interested in the scientific well-being of our profession to work up towards it, and, in any event, leave time-worn roads for a more direct avenue to the Temple of Knowledge.—EDITOR, *International.*

BAD FOR SMOKERS.

A careful record has been kept at Yale college for the past eight years, with reference to the physical condition of nonsmokers as compared with smokers. It has been found that nonsmokers are

20 per cent. taller, 25 per cent. heavier, and have 60 per cent. more lung capacity than smokers. A recent graduating class at Amherst college presented a similar difference in favor of nonsmokers, who had gained in weight 24 per cent. over the smokers, and in height 37 per cent, and also exceeded them in lung capacity.—*Ex.*

BUCCAL MANIFESTATIONS OF NEUROASTHENIA.

[TRANSLATED FOR THE ODONTOGRAPHIC JOURNAL.]

In one of the late sessions of the Odontological Society of Paris, M. Joseph made use of the following closing words :

A number of clinical cases have inclined me to think that neuroasthenia, like other affections of the nervous system, may be accompained by special phenomena in the mouth. These manifestations are of diverse kinds, from hyperaesthesia of the teeth to more serious disorders. As we know, neuroasthenia is a dynamic irregularity of the nervous system, without recognized lesion. M. Viau presented to the Society not long ago, an observation "Upon an Undescribed Form of Periodontitis." "This affection is characterized," says the author, "by very pronounced mobility of the affected tooth, by the almost complete disappearance of the alveolar walls, and by absence of suppuration. The lesion is limited to a single tooth."

This localization of the lesion, and absence of suppuration, leave the author in doubt as to its nature. It has great resemblence to senile atrophy. For my part careful study of the clinical cases referred to, leads me to attribute the observations cited by M. Viau to neuroasthenia.

Whatever the primal cause of these manifestations, their characteristic is undeniably the degeneration of the dental tissues, alveolar and gingival, and hence we find ourselves in the presence of a soil enriched for the invasion of microbes. Much as this point of so great importance in buccal pathology has been studied, these peculiar disorders have not been cleared up, and we must content ourselves with taking close observation of such as occur in our practice.—*La Odontologia.*

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*Atropiæ	grs.	$\frac{1}{10}$
Stropanlhii	"	$\frac{1}{5}$
Cocaine Mur	"	50
Acidt Carbolici	"	10
Ol. Carophylli	m.	3
Aquae Destillatæ	dr.	1

THE
ODONTOGRAPHIC JOURNAL.

CONDUCTOR'S DEPARTMENT.

OUR CONTENTS—NOTE AND COMMENT.

The arbitrary character of the drop, otherwise *gtt.*, is neatly shown up by the editor of the *Ohio.*

Dental jurisprudence revised must take some notice of liability for the dismissal of patients. Medicine has just been made to do so.

Dental education in Chicago is running to good buildings somewhat. The days of barn and attic facilities have gone for all time.

Dr. Johnson, of Chicago, (his front name has escaped us) has "writ a book." "Also," as Mark Twain says when he travels in Germany.

To fill or not to fill—that is, immediately, is a question. The possibilities of trouble would seem to be well weeded out of that practice that fills immediately after the removal of *living* tissue from the apex of the root; remotely, or after treatment, where tissue in this situation is found dead.

Dr. Haskell says—"There are more failures in artificial dentures from faulty articulation, than from any other cause." His own method, and that given in great detail by Dr. Templeton, if at all carefully followed, ought to reduce the number of failures to a minimum. Double vulcanization by the Snow method should not be omitted.

Some of us should have slept more when life was not as short as at present, then we would have become physically "sizeable." By the way, what a lot of soporific work some of the avoirdupoid men in dentistry must have done when in their callow youth. This, if we may believe *Good Health*, was right and proper, and the records of Yale and Amherst add "Don't smoke."

According to one who has been there, the gold cure consists of selfsaturation with whiskey and wholesome dosing with apomorphia, an artificial alkaloid derived from morphine. The salt used is the hydro chlorate. It is described as "a systemic emetic acting directly upon the vomiting center and is the quickest, most certain and least irritating of all emetics." It does the work apparently, but the patient must avoid "breaking over."

Dr. Johnson's hot water treatment of pericementitis, and especially that acute form preceding abcess, is entitled to trial on the very first opportunity. The hot water is taken up in a bulb syringe and a fine jet directed into the tooth and against it and the gums, the temperature of the water being raised as it becomes bearable to the patient He has yet to meet with a case where persistent effort has failed to afford substantial relief.

An innovation in dental journalism will be found in Rev. R. Thomas' discussion of the advantages and disadvantages of specialism. It is a trite saying that every man should know a great deal of one thing and a little of everything ; but the tendencies in the specialist to hold his own and other peoples noses to his individual grind-stone, reduce his world to the microscopic, and his objects and aims narrow down to a littleness that is not missed even when finally lost.

The American dentist is out so far as Great Britain is concerned unless he consents to bemean himself, his countrymen and his home schools, by throwing aside as no value his years of study and his American diploma and entering upon a course inferior, as to practicality, in every particular and prescribed for him and his by foreigners If the American were as provincial and narrow as his English brother the professional fence on this side would go up in a night. But it will not go up ; for while the American dentist is feared on all sides and by all other practitioners, he fears none.

Gutta-percha in crowning is not new. It was used in Rochester in '78 to set Richmond crowns, and had been introduced there as early as '76 by Dr. LaSalle, who had long used it for setting English tube teeth in which had been soldered angular and barbed metallic pins. One of Dr. Brown's "advantages," that "it is impervious to acid secretions or bacterial influences" will not hold good. That it is notoriouly pervious to secretions and a veritable sponge to the by-products of micro-organisms if not to the bacteria themselves, goes without saying—or ought to. But notwithstanding the failure of this count it is an excellent "setting" when skilfully handled.

The care of the teeth to the fifteenth year is the care of the teeth during the most critical period of their existence, barring, possibly, that antedating their eruption. Much of the work at this time is necessarily of the most temporary character, but without it, however unsatisfactory to the operator, the teeth are apt to tresspass dangerously near the field of the forcep, if they do not actually enter it. Dr. Perry's able discussion of the matter deserves study, not only because of the importance of the subject itself, but also on account of the authorative utterance of a man specially qualified by long observation and ripe experience.

Mr. Mummery's presentation of Vicentini's studies of the cryptogamic flora of the mouth is a most readable article. Leptothrix racemosa is the Vincentini micro-orgamism chiefly dwelt upon, together those other forms that, according to this investigation, are in the main or wholly derived therefrom. According to Mr. Mummery this claim is too broad, leaving as it does to be of necessity otherwise accounted for, too many distinct forms that differ, not only in their outward aspect, but also their manifestations of vital action. Like all investigation that claims too much, this will stimulate to work in others and the outcome is likely to lead closer to the facts of the case.

Post graduate schools are an outgrowth of necessity. Heretofore the colleges have had barely time sufficient to inculcate knowledge purely theoretical, but now in these three-year-course days there is no good reason why the graduate should not be able on his first commencement day to do a very much better than average piece of dentistry as well in as out of the oral cavity. Notwithstanding all the advantages of the best of modern colleges, graduates should betake themselves early to a good post graduate school where the special thing in which they wish to perfect themselves is thoroughly taught. In doing this he should leave out of the consideration wholly the raft of fool schools whose only excuse for being is the love of their proprietors for easily acquired pelf. Be taught by men competent to teach, or keep your money and stay at home.

Glass filling, or the more America porcelain inlay, makes an ideal operation in favorable cases. The great variety of materials put on the market by the inventors and manufacturers of quick-process porcelain crown apparatus ought to have the effect of making inlay operations easier and quicker of accomplishment, less expensive, and therefore more popular with all concerned.

The evidence of neuroasthemia has got into the mouth.

Teaching the cleft-palate patient to speak is a fine art. Mere *elocution* fails utterly; but *articulation* taught by one familar with the palate-lesion, and its possibillties subsequent to mechanical treatment gives the most satisfactory results. Too many of those who affect to treat these cases regard their work as done when the appliance has been adjusted. Dr. Kingsley knows better, and acts according to his knowledge.

Dr. Worcester indulges in some wholesome criticism of statements made in the course of one of our copied articles in the January issue. "Decent" plates are made every day, and between plaster casts at that. The article criticised suggests the "Stuck and Owen process" of some years back. We got "Stuck," but have always been a long way from "Owen" the 17 good dollars for "an office right for the full term of the patent."

Women in dentistry are no novelty now-a-days, but when Dr. Lucy Hobbs Taylor started out things were different. Her story is an entertaining one.

Dr. Truman, of the *International*, shows very clearly that our dental organizations are anything but satisfactory. But what shall be done? By whom shall it be done? When?

Dr. Taft tells of the injurious effect, alleged or otherwise, of amalgam fillings, and cities a number of facts and cases that seem to lend color to his views. Nevertheless the question occurs at every turn, Cause or coincidence? Again, the conclusions are vitiated by the fact that the patients had been prepared before hand for the great change, and here the possibility is suggested that the cure was purely subjective. The same thing might be said of the disease.

Instead of catering to nostrum makers and peddlers, and enriching them by the thousand per cent. for solutions that consist almost wholly of water, the man who would have a obtundent or injecting solution is referred to page 54. The worst thing about some of the backwoods products now in the market is not always found in their names, though the Lord knows that is enough, not only to sicken the patient but kill the dentist.

The bacilli have got after bank notes. This comes direct from Havana.

CORRESPONDENCE.

Dear Sir:—In the January number (1894) of the Odontographic Journal I have noticed an article signed "Harold, (D. C.), *Ohio*," in which the following items will hear some criticism, at least from my experience. He says:

"No man can make a decent, or a half-way decent plate and vulcanize it between plaster casts."

"A rubber plate can be made only between metal dies."

These seem to me to be pretty broad assertions, but they may be due to the lack of a better light on the subject.

Now, it has been my practice for many years in making rubber plates to use plaster casts, but in order to attain the advantages of metal dies with plaster, it becomes necessary to exercise great care in making the casts and mould.

Fine dental plaster is essential and should be mixed thin and well stirred to eliminate the air before taking the impression or pouring for the cast or mould.

In waxing up, a sheet of wax of about the thickness of medium straw board should be pressed over the cast and the teeth arranged in their appointed positions with just enough wax to designate the plate when finished, carefully carving the wax around the teeth.

After this is done carefully use a blowpipe and flame over the surface of the wax model until it is perfectly smooth, being cautious not to heat the wax enough to make it run.

As soon as the wax cools, brush *lightly* with the finest polishing brush on the laboratory lathe, which gives a surface to the wax as smooth and glossy as a piece of polished plate glass, a very nice surface over which to cast plaster.

Invest in the usual manner in the flask, separate after hardening, by slightly heating in warm water, remove wax as far as possible with the fingers or otherwise without marring the mould, and thoroughly boil in water to cleanse off any wax remaining in the mould.

Keep a bottle of liquid silex (sodium silicate) on hand, diluted in the proportion of one (1) part of the silex as purchased from the druggist to four (4) parts of *distilled* water, and on the moment of removing the flask from the boiling water paint the surface of the mould carefully with the thin solution of silex, using a fine *bristle* brush about the size of a small lead pencil, until there is a slight glazing of the silex all over the surface of the mould.

Now cut a shallow groove all around the mould wherever possible, about an eight of an inch or less from the margin, but do not cut grooves from the mould to the outer groove unless opposite joints to relieve pressure at those points in packing. Pack with good rubber and use a thin piece of either fine silk or linen between the halves of the flask so as to examine as to quantity after pressing together, continuing this process until the mould is just full. In case of any surplus remove on the last separation of the flask, as well as the cloth used in packing, which is easily done by keeping wet with boiling water.

Finally bolt the flask and vulcanize, preferably for five (5) hours at 250°, allowing to cool in the vulcanizer slowly. Should any silex adhere to the rubber after removal from the flask it can easily be removed with a little sulphuric acid, if not by the ordinary brushing.

If the above details are carried out with precision it becomes an easy matter to make a rubber plate with a hard *vitrified surface* between plaster casts, that will not need scraping or filing (except where the rubber has passed out by expansion in vulcanizing) and will be ready to polish with the brush when it comes from the vulcanizer. Respectfully, J. W. WORCESTER, M. D.,

April 10, 1894. 141 West 34th Street, New York.

COLLEGE.

The 48th annual commencement of the Ohio College was held March 27th.

Prof. Smith awarded the prizes, Pres. J. W. Simpson, of Marietta College, delivered the address, and Dr. W. C. Elifritz the class oration.

The medal for best general examination was awarded to W. C. Elifritz ; operative attainments, J. I. Way; prosthetic attainments, J. A. Auld. The number of matriculates was 151 ; graduates 34.

The Kansas City Dental College commencement was held March 5th.

The Eight annual commencement exercises of the American College was held at Chicago, April 2d.

Dr. Cigrand conferred the degrees, Dr. Angle delivered the faculty address, Dr. Alice Menges, the valedictory, and Mrs. Ellen Henrotin presented the twelve prizes. The graduating class numered 43.

The Dental Department of the University of Buffalo will hold its second annual commencement exercises May 1st, in connection with medicine and pharmacy. The public examination before and by the 16 curators will begin at 9 a. m. of the above date.

Dr. and Mrs. Barrett, were at home February 16th, to all connected with the Buffalo dental school. The reception was in honor of Dr. C. E. Francis whose visit to Buffalo was chiefly for the purpose of giving his course of lectures on the "Care of Children's Teeth." The college orchestra, glee club, and recitationists contributed generously to the pleasure of the evening.

Drs. Jackson and Bodecker were on hand at the appointed days, the former to discuss and demonstrate the Jacksonian method and appliances for correcting irregularities, the latter to lecture on dental embryology.

Germania is a monthly magazine for the study of the German language and literature, published at Manchester, N. H.

The classic-letter men of Chicago will rejoice to hear of the issue in New York of a newspaper in modern Greek.

SOCIETIES.

The Eighth International Congress of Hygiene and Demography, 1st to 9th of September, 1894, at Budapest, under the high patronage of his imperial and apostolic royal majesty, has issued a provisional program. It provides for discussing bacteriology, epidemics, hygiene of the tropics, trades and agriculture, children, schools, food, towns, public buildings, dwellings, railroads and navigation, military hygine, red cross, saving of life, state-hygiene, sport, baths, veterinary, pharmacology, etc., etc.

The thirtieth annual meeting of the Illinois State Dental Society will be held at Springfield, Ill., May 8, 9, 10 and 11, 1894. An interesting program is in course of preparation. Practitioners of Illinois and adjoining States are cordially invited to attend.

The twenty-sixth annual meeting of the Dental Society of the State of New York will be held at Albany, May 9th, 1894.

At the February 26th meeting of the Eight District Society, held at the Tifft House, Buffalo, *pyorrhœa alveolaris* held full sway. Dr. Van Woert led and other distinguished members of the profession followed. As a rule the discussion was from paper, implying unusual care in its preparation. It was a pyorrhœa symposium in good earnest. Current issues of the *Practitioner*, *Cosmos* and *International* have the discussion in great detal.

The Eleventh International Congress of Medicine is a thing of the past. " Odontology " will be heard from in the near future.

The American Dental Association will meet at Old Point Comfort, Va., August 7th. The officers of sections are already in the field for material for reports and exhibits.

" This direction toward the sunrising is the origin of the term orientation, which, however, has come to be applied just as frequently to other buildings, the direction of which is toward the west, or north, or south."

This from a review of Prof. Lockyer's recent book shows how far-fetched a very common histological term is. From astronomical considerations in temple buildings to imbedding in parafine !

DENTAL SOCIETY OF THE STATE OF NEW YORK.

The twenty-sixth annual meeting of the above society will be held in the Y. M. C. A. Building, Albany, on the 9th and 10th of May, when the following essays will be presented:

Dr. S. H. Guilford, Philadelphia, " Crown and Bridge Work, a protest against some of its abuses."

Dr. J. Allen Osman, Newark, N. J., " Can Pyorrhœa be Cured ?"

Dr. W. J. Turner. Brooklyn, " The Use of Peroxide of Sodium as Recommended by Dr. E. C. Kirk."

Dr. R. M. Sanger, East Orange, N. J., " The Sixth Year Molars."

A cordial invitation is extended to the profession.

April 16th is the date of the Central (N. J.) Dental Association. Feasting, music and essays figure on the program. Dancing seems to be the only good thing missing. Would that we were a Jerseyman.

The 7th district dental society will hold its annual meeting in Rochester, April 24th and 25th.

. PELLETS.

Ether or chloroform is said to remove iodoform odor from the hands, linen, etc.

On a recent visit to New York a friend saw an excellent copy of Owen's *Odontography* in Putnam's. Nineteen dollars was asked for it.

"What's that," asked a patient from whose teeth the dentist had just removed a little salivary calculus?" "That's tarter." "Oh, yes; sort of barnacles."

A patient, the daughter of a most devout member of the Society of Friends, when about to be estopped by the rubber dam, remembered that she had never taken kindly to a quaker bonnet.

"Doctor, what's that?"

"That's a sand-paper disk."

"Glue too?"

"Yes."

"Judging by the flavor the cow must have had her foot in it."

The only matter of wide popular interest in the Medical Congress at Rome thus far has been a paper yesterday by Dr. Menella, the Italian delegate, offering a new treatment for consumption. He affirmed that he had cured thirty-nine cases of genuine pulmonary tuberculosis by constant inhalation of the essence of mint and the external use of creosote and the essence of mint in an alcoholic solution.—*Sun.*

In looking for something else we fell on the following in the *Century* dictionary.

"Rigg's disease. Pyorrhœa alveolaris, or alvealar abscess."

This suggested a glance at "pyorrhœa (From the Greek, pus to flow.) Purulent discharge. Pyorrhœa alveolaris, an alveolar abscess."

And yet volumes have been writ and are yet to be written on this, be lexicographers (Sic.), simple subject.

Sheridan's reply to the lady who told him that his writings were such charmingly easy reading—'Easy reading, madame, is dammed hard writing'—has never got into the general mind; and very few of the thousands of Tyndall's listeners, I imagine, ever had an inkling of what these facile discoures cost the lecturer. I used to suffer rather badly from 'lecture fever' myself; but I never met with any one to whom an impending discourse was the occasion of so much mental and physical disturbance as it was to Tyndall. He was quite incapable of persuading himself, or of being persuaded by others, that, after all, a relative failure now and then was of no great consequence; indeed, from the point of view of pure art, might be desirable. Whatever he gave it must be the best he had, whether it were a lecture or a dinner. Now, that sort of housekeeping costs.—*Spencer.*

BOOKS.

Pearson's Appointment Book for the vest pocket, published by R. I. Pearson & Co., Kansas City Dental Depot, reached us just too late for notice in our January issue. It is uniform in size and style with that of former years, and just as convenient. Some people never forget, and our friend Pearson is one of them.

SEWAGE DISPOSAL IN THE UNITED STATES. By Geo. W. Rafter, M. Am. Soc. C. E., and M. N. Baker, Associate Editor *Engineering News*. New York: D. Van Nostrand Company. London: Sampson Low, Marston & Company. Pp. 598. Further mention of this pioneer work on sewage disposal in this country, also extracts of interest to dentists of a scientific turn of mind, are held over for our next issue.

POPULAR ESSAYS UPON THE CARE OF THE TEETH AND MOUTH. By Victor C. Bell, A. B., D. D. S. Published by the Author. Pp. 103. This little volume was prepared for the use of laymen, and the hope is expressed by the author that it may be the means of spreading knowledge of the importance of the teeth among the people, more particularly the young, and through the medium of the schools, and at the same time may not come amiss to dentists who desire to reach the public by this means. Dental education is sorely needed by the masses, and if they can be brought to even the casual reading of books of this character untold benefit would ensue, and the sharing of it would be mutual as between patient and practitioner. The several chapters treat of cleanliness, filling, extraction, artificial dentures, children's teeth, crowns and bridges, fractures and cleft-palate. Mothers are advised, hints given on home remedies and the author's views of dental quackery. The form and style is in keeping with the contents.

CATCHING'S COMPENDIUM OF PRACTICAL DENTISTRY FOR 1893. By B. H. Catching, D. D. S. Atlanta. Published by the Author. Pp. 298. It again becomes our privilege to notice this at one time venturesome undertaking, and compliment profession and author on the improved character of the work. Experience tells in every department of activity, and the four years work in bookmaking has made the author an expert. The present volume shows improvement in nearly every respect. The classification is good, the compilation all that one could ask for, and the index sufficiently complete for present purposes. Later, however, as the volumes increase in number and size and importance, it will be necessary to resort to cross-indexing, which has of late reached the dignity of a fine art.

As stated by the author, the Compendium has passed the experimental stage and has become a necessity to the progressive dentist. Here we have the condensed practical output of the journals of six different nations, and next year we are to have that of the journal of the world. The editing and translating for this volume were done by Dr. Miller of Berlin, Dr. Hogenschmidt of Paris, Dr. Dunn of Florence, for the German, French and Italian respectively.

A STANDARD DICTIONARY OF THE ENGLISH LANGUAGE. Funk & Wagnalls Company. New York. Volume I. Pp. 1069. A to L inclusive. As tersely put on the title page this magnificent work is upon original plans designed to give, in complete and accurate statement, in the light of the most recent advances in knowledge, and in the readiest form for popular use, the meaning, orthography, pronunciation, and etymology of all the words, and the idiomatic phrases in the speech and literature of the English speaking people.

Press notices and reviews have made the name of the Standard Dictionary familiar to the general public, and in not a few cases a household term. As a work of reference it not only outranks in every particular the time-worn Webster, but trenches closely on the recently completed Century, "the first completed scientific work of the kind," and is an advance upon this in that it adds 75,000 new words to the language, even after throughly weeding out the worse than useless generally classed as *obsolete.*

Judged from the medical and dental standpoint, using the dictionaries of those professions as a standard of comparison, it is simply marvelous that the purely technical should receive such generous treatment as to make the technical dictionary largely a thing to be dispensed with. The same may be said of electrictiy, the advances of which alone have made it necessary to introduce over 4,000 new terms.

To those without a dictionary, or those owning Webster only, there remains a choice between the Century and Standard, and to such the latter will appeal, whether with ground of convenience of reference, conciseness of definition, or cost. There are two editions, single and two-volume, the first costing 12, 14 and 18 dollars, according to binding; the second 15, 17 and 22. Our advice to purchasers is to get the two-volume edition, as the difference in cost cuts too small a figure in the matter when convenience of handling is considered.

THE

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REFLEX NEUROSES.*

DR. W. W. SMITH, Penn Yan, N. Y.

While recognizing the importance of the subject to be considered, I did not fully realize its complexity till attempting to explain the philosophy of nervous currents concerned in this pathological condition, and decided that to attempt this would be a useless waste of time, as it would necessarily be a matter of much speculation.

If I can, however, arouse a greater interest in this subject among dentists, and a more mutual interest between the dental and the general practitioner, as well as the oculist and aurist, I shall be gratified. I am persuaded that a large proportion of dentists give attention *only* to relieving local pains in the dental organs, and but few physicians understand, or will admit, that dental lesions are capable of reflecting any serious trouble in other parts of the body. These might often find in the dentist an important aid in diagnosing complicated cases and vice versa, and we should not miss any opportunity of interesting them in this subject by relating cases, seeking their counsel, etc.

I wish to present the following cases selected from a large number which have come under my observation, trusting they will not be altogether uninteresting.

The first case I shall give, demonstrates the most common form of reflex action. Mr. A. sought relief from pain in lower third molars, which had kept him awake two nights. I found slight buccal decay, and very sensitive to the slightest touch ; advised filling ; said to him " your trouble comes from the upper tooth—third molar," and advised its extraction, which was done, giving immediate relief, also the extreme sensitive condition of the buccal cavity in lower tooth disappeared ; it was filled a few days later with little or no pain. There had been no pain in the upper tooth at any time.

The second, a little less common case. Mrs. B. aged about 45 applied for an appointment, her teeth requiring general attention, remarked incidentally that she had had toothache in superior right second molar, but it had subsided two days before, so said she "would not trouble it at present." She also said her eyes had been paining her severely for two days, were considerably inflamed, could not see to read without much difficulty, and must have them examined, as she thought she had outgrown her glasses.

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*Read before the VIIth District Dental Society, April, 1894.

I found the above mentioned tooth loose in its socket with a deposition of tartar extending to apex, and persuaded her to have it extracted, remarking that it might not be necessary to change her glasses. I also found an exposed pulp in inferior left first bicuspid, to which an application of arsenious acid was made, and directed her to return in three days, which she did, saying her neuralgia had subsided and sight recovered. This dressing was then replaced by one containing tannic acid, and on seeing her a few days later was informed "that the tooth had nothing to do with the eye trouble on that side, as it was as bad as ever."

I then removed the dressing and pulp and filled canal, and she reported a few days later that the trouble had entirely disappeared. There had not been any pain in the bicuspid at any time.

Mrs. C. aged about 30, suffered for two weeks with severe pains beneath the left eye, with slight soreness in first and second molars of upper jaw—same side. Her physician being unable to find cause for the neuralgia, advised her to consult her dentist. After much urging she consented to the extraction of the inferior third molar which was decayed, but in which there had not been the slightest pain. Its removal gave her immediate relief.

Mr. D. aged about 19, came to me at holiday time from college, to meet an appointment, his teeth requiring general attention. Said he did not feel able to have much done at that time, and that he could not return to college because of severe neuralgia over left eye which occurr·d regularly every morning at nine o'clock and continued for an hour, and this for several weeks.

He had consulted three eminent physicians with little or no satisfaction as to the cause. I had a few months previous capped the pulp of inferior first bicuspid, same side. I inquired if it had given him any trouble, and he assured me that it had not in the least. Being suspicious that the capping had not been a success, I suggested that this might be the source of the trouble, and his incredulity was only removed after relief from the intense suffering, which came directly after devitalizing pulp, treating, and filling canal of tooth just mentioned.

Miss E. came to me with the following history, viz.: While in Glassgow, her former home, at the age of 19, she began having trouble with left eye, causing her a great deal of pain, and at times the vision was lost entirely. At one time the lid became completely paralyzed, which was relieved by the galvanic battery. These conditions continued with more or less severity for ten years. After coming to this country and for six months before coming to me, she suffered severe temporal neuralgic pains on left side for four hours each night, begining at eleven o'clock, being so intense at times that it became necessary to call her physician to relieve her in middle of night. Her loss of vision was again complete, its lid again became paralyzed, and at this times he began having same pains and eye trouble on right side. Her physician advised her to consult an oculist in this city, who, after an extended examination failed to find cause for the trouble, and directed her to return to him for further examination. It was at this time that she came to me, not by advice of the physician or oculist, but a *friend.* By making a deep incision, I found an impacted upper third molar on left side, and exposed entire end of crown. On the opposite side lower jaw, I found an unsuccessful pulp capping operation in second molar; removed cap and applied arsenic; these operations were followed by complete relief, which however, recurred after a few weeks, on left side, and continued until a few weeks later, when with much difficulty I extracted the impacted molar, and the recovery was complete and permanent. About a year has passed, and she told me a few days ago, she had not had the slightest recurrence of the trouble, her eye sight being perfect. She had not even a suggestion of any pain in either of the teeth causing the trouble during this period of ten years of suffering.

Mrs. F. aged about 35, had suffered for several months with severe occipital neuralgia, had applied several times for advice "felt sure it came from amalgam fillings" of which there were a large number in her mouth. Physicians had advised their removal.

Being willing to experiment, I consented to remove them, but first made a thorough examination of each of her teeth, a thing I had done several times before, but found no indication of any trouble in them. Beginning by removing filling in left inferior third molar, and on coming to and removing one in first bicuspid found an exposed pulp, to which arsenic was applied, directing her to return in three days, which she did, reporting that her trouble had entirely disappeared and she had not had a recurrence of it since, (about three years) although most of her posterior teeth still contain large amalgam fillings. She had not felt the slightest trouble in the bicuspid treated.

Mr. G. aged about 18, applied to a physician for relief from otalgia, right side, having suffered severely. An examination failed to reveal any local ear trouble, and he brought the young man to me thinking it might have a dental origin. When presented, that side of the face had become paralyzed to that extent that he had no use of its muscles ; had no use of the eye and his lips only moved mechanically by action of muscles on opposite side. On examination, I discovered a small portion of the superior third molar, same side, and this not larger than one half the size of a pea, this was incrusted with calculi at its apex, the extraction of which was the beginning of releif, which was complete in a few days. There had not been the slightest pain in his teeth during the trouble.

Mrs. H. brought her daughter of twenty months to me after the following experience, viz.: About a week previous she had marked symptoms of fever and diarrhea, which was treated by her physician. After two days these symptons disappeared and the right leg became paralyzed to that extent that she had no use of it ; the kidneys failed to act normally and nitre was prescribed till it lost its effect. An analysis of the urine was made, which failed to disclose any kidney trouble. An examination was made for hip trouble, but none could be discovered. No cause being found for these alarming symptoms, her physician decided they could do nothing but await developments. On examination of her mouth, I found she had cut only her incisors and two or three molars, the cuspids being unerupted and very slight symptoms of irritation existed. I told them I thought it was hardly possible that could be the cause of the trouble. The mother very naturally became much concerned and telegraphed her husband who was in a distant city. He came the following day, when they again came to me. I had by that time decided that it was not only possible, but probable that dentition was the cause of the trouble, and gave them my revised opinion, saying I felt justified in lancing the gums, inasmuch as no other cause could be discovered for the trouble. Which was done, making a deep incision over the cuspids in either jaw on right side thoroughly liberating them.

The following day the child could stand on its leg, and the second day could walk around the room. A complete recovery followed with no other treatment.

Mrs. I. aged 35, came for relief from pain caused by an exposed pulp, which I treated and made appointment for general treatment and filling. During these operations my attention was directed to a very slight discoloration of the four superior incisors. A fistula left no doubt as to the condition of one, but I was in doubt concerning the others, as they gave only slight response to percussion and she had not had any pain whatever in them for eight years, but their appearance created suspicion in my mind, which was confirmed by opening pulp canals and finding them in a septic condition with very offensive odor. She then told me of eight years of suffering which occurred periodically at the time of her menses and occasionally between these periods, consisting of occipital and frontal neuralgia of at least a day's duration, which prostrated her. She then remembered that these teeth had been filled about nine years previous, and soon after, having some trouble with them, had some inflammation, but which subsided and had had no trouble with them since. Her sufferings had been almost unendurable, had sought relief of several physicians but obtained none till about a year previous to her visit to me, when the trouble was attributed to a uterine lesion caused by birth of a child nine years before. An operation was performed which resulted in relief from the occipital neuralgia, but the frontal pains continued unabated till the treatment of the above named teeth when they gradually subsided. A condition of septicæmia was also apparent. Her teeth had been in charge of dentists during these eight years, but the condition of the incisors under consideration had been overlooked. She was not only relieved of the neuralgia, but I am persuaded her life was saved by the discovery.

The foregoing cases have been presented somewhat in detail, first to show the importance of careful and thorough diagnosis whether any pain is complained of or not, and second that we should lose no opportunity of instructing our patients in regard to the relation the teeth sustain to other parts of the body, and the importance of obtaining and preserving a healthy condition of these organs. Third to encourage a more intimate relationship between the general practitioners and other specialists that we may thus more readily and intelligently discern the cause of suffering whether it is reflected from the teeth to other parts of the body, or from other parts to the teeth.

I am convinced that a large amount of suffering has its origin in unrecognized dental lesions, and the dentist who successfully diagnoses and removes these causes, will bring to himself and to his profession, honor, and enjoy the satisfaction of feeling that he is doing what he can to relieve suffering humanity.

DENTAL SCIENTIFIC WORK.

In its scientific phase the growth of dentistry has not kept pace with its development as an art, probably for the simple reason that manual skill is more easily acquired than scientific culture. The disproportionate growth of dental art, as manifested in the many delicate and precise methods and manipulations which characterize it, is also no doubt largely attributable to the more material fact that the development and exercise of the art is immediately productive of financial return, while the resultsof scientific work are seldom or only remotely convertible into money value. This is particularly the case when scientific investigation is pursued solely for the purpose of arriving at a knowledge of abstract truth.

The ratio of development between the science and the art of dentistry is naturally in close relation to the number of workers in each department. The exigencies of practice, the necessity for maintenance, as well as lack of capacity or special training, force the majority of dental practitioners into the ranks of the routine bread-winners, in which occupation the whole of their energy and ability is expended. Whatever of effort they may apply to questions involving original research or experiment is directed toward immediate utilitarian ends, in order that their bread-winning capacity may be increased. There is, however, a proportion, small though it may be, of workers in the dental ranks who find or make the time to investigate problems in dental science which have a wider scope and broader application than the direct utilitarian. These men, imbued with the love of truth for the truth's sake, are patiently and persistently furnishing the foundation-material upon which future dental practice and teaching must rest. Of these workers for the dental weal it is frequently said that their work is done at the cost of great self-sacrifice, probably meaning that they are not remunerated in cash for their services rendered ; but such work is a labor of love which brings its full compensation in the results achieved, and it in no sense involves self-sacrifice. But a few years ago dentistry had no scientific basis. It was a mere handicraft, which, from the point of view of its present development, was a rude one. The results of scientific investigation in dental histology, pathology, materia medica, therapeutics, chemistry, and hygiene have completely revolutionized the practice, and modern dentistry is what it is to-day because of the leaven of scientific workers in its ranks who have developed it from its crude beginnings. Too often the criticism is made by the so-called and generally self-styled "practical" man that this scientific work in dentistry is no doubt all very interesting to those who like it, but there is nothing in it for the busy dentist to put to actual use in his every-day practice. Such criticisms arise from ignorance of the facts, or a very narrow view of them, and need no further refutation than reference to the scientific reasoning and research in bacteriology which gave to the world the practical procedures of antiseptic surgery, or the elaborate theoretical chemical reasoning which developed, besides the entire series of coal-tar colors, nearly a whole materia medica of synthetic drugs and therapeutic agents. In dentistry itself whatever of certainty and exactitude appertains to therapeusis, or of precision and successful adaptation has been achieved in dental prosthesis, may be safely credited to the scientific investigation in the departments of chemistry, physiology, bacteriology, pathology, physics, metallurgy, and mechanics which has contributed to the perfection of our methods.

What we need, then, in dentistry is not more of the so-called practical, by which is meant the strictly empirical, but more of the essentially scientific, which is the only truly practical ; less of mysticism and rule of thumb, and more of the rational and the exact.

Reports of dental discussions, periodical dental literature, and dental standard works are replete with statements and arguments based upon mere speculation, with no founnation of fact beyond that constructed in the brain of the originator. Only comparatively rarely are reports or statements made which are founded upon original research or experiment, or even upon accurately observed individual phenomena. When it is considered that only such matter can possess any scientific importance or lasting value, it must be evident that we are wasting time and energy in giving it attention.

It was not given to all men to be scientific investigators in the broad sense, but it is, after all, largely a question of degree, for every one is, or should be, capable of observation, and the ability to correctly interpret and report the result of such observation is simply a question of practice and training.

To properly observe and interpret selected phenomena is the initial step in scientific investigation, and it is the ability to correctly reason and generalize upon the results so obtained which constitutes the scientific method of thought. It cannot be successfully gainsaid that whatever of substantial progress has been made in dentistry has been achieved through applications of the scientific method to the study of its phenomena, due regard being had for what in reality constitutes the scientific method. The period of its growth in which empiricism and reasoning of the phrenological order held exclusive sway in dentistry has passed by, and henceforth a due respect for the uncompromising requirements of scientific exactitude must govern its procedure, rather than faith in the *ipsi dixit* of self-constituted authorities or in the plausible claims of the nostrum-vender.

The growth of the scientific method in dentistry presents a geographical phase which cannot be ignored or set aside. Whatever claims to precedence we may make with respect to the development of American dentistry as an art,—and they are, no doubt, true in the main,—no one who even superfically observes the matter can fail to see that our transatlantic *confrères* produce an aggregate of scientific work in dentistry which far exceeds the output in this country in the same lines. The scientific method of thought and its application to original research is the predominating characteristic not only of continental dental writers, but of those of Great Britain as well. We are too prone, in our anxiety to utilize the practical results of their plodding and laborious investigations, to ignore the steps by which the results were achieved, an intelligent understanding of which is generally necessary to its successful application. It behooves us, then, to cultivate an appreciation of the value of this class of work, and to train ourselves and our students into familiarity with scientific methods, in so far, at least, as they apply to dentistry, not only that our present standards shall be improved, but that American dentistry shall not present the distortion of a one-sided growth. The next system of dentistry, when it shall be written, will not be exclusively the American system, for the field has become so enlarged, and the scientific work of the dental profession outside of America has been of such importance, that geographical limitations will find no place in such a sysiem if it is to be fully representative of the subject. It will be an international system of dentistry, and we should see to it that in such an event, or in any case, the American quota of work does not suffer by comparison with the scientific dental progress of Europe.

The application of the laboratory method in dental education, the introduction of the technic method in our schools, by bringing the instruction in operative and mechanical dentistry and therapeutics into line with the laboratory method as utilized in the departments of pathology, chemistry, and histology, is a most important step toward cultivating a scientific habit of mind and a desire for original research among the dental students of to-day, which must tend to elevate our standards and ideals, and react favorably on future methods of practice. It is equally important that those already in active practice should cultivate the same tendencies, not only for individual benefit, but for the good of the profession. Each man owes it to his calling to devote at least a fair proportion of his ability to the advancement of that calling, and it cannot be better done than by the pursuit of some line of research which shall translate something of the unknown into terms of the known, and publishing the result broadcast for the benefit of his colleagues.—EDITORIAL, *Cosmos.*

THE METHODS OF OUR FOREFATHERS.*

DR. W. W. BELCHER, Seneca Falls, N. Y.

In addressing you on the methods of our forefathers in dentistry, it is not necessarily those of the time of Nineveh or Babylon, nor yet of mediæval times, when toothache "might be relieved" by an application of the fat of "little greene frogges or of the graye worms breathing under wood or stones, having many fete."

Dentistry has developed so rapidly from the trades practiced by barbers, blacksmiths and jewellers, to the position of an honorable and respected profession that it might be said, the new of to-day is the old of to-morrow. No other profession has made such rapid progress,—the medical profession, law, in fact most of the learned professions, can look back many centuries to their gradual development. There are claims of ancient dentistry 2,000 years before the Christian era, but dentistry as a profession can claim little more than a century for its development. Our first distinctive American dentist was John Greenwood, who opened an office in New York city in 1788.

It can truthfully be said that America is the cradle of dentistry. Nearly every method or appliance of value, has had its birth here,—unless we except amalgam, and this it is said was the invention of either the French or his satanic majesty! Here, was established the first dental college, the first dental society, the first dental journal, and the first distinctively dental chair had its birth in this dental district. The Archer dental chair of to-day is its direct descendant.

Looking back in history, it is a matter of surprise to the younger of us that all the well known and now accepted appliances and methods of practice have had to fight their way on every hand, amalgam, cohesive gold, the mechanical separation of teeth, preparatory to filling, the hand and mechanical mallet, the dental engine and even the rubber dam, have received their share of censure. It is a "survival of the fittest." The history of dentistry is sufficient to forewarn any operator against denouncing an established method or material, or recommending an unpopular one, and if we read history aright a great name does not always signify correct practice. Doctor Arthur's system of artificial separation of teeth, and a college professor advocating the indiscriminate use of arsenic as an obtundent, may be cited as instances.

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*Read before the VIIth District Dental Society, April, 1894.

Surely the dentist of to-day has an easy time compared to his brethern in the past,—no dental societies, no colleges, no books, every man his "secret methods" and appliances. A dentist would not permit another in his laboratory, nor accept a student without a considerable recompence, and even then the student had to hustle for his information. "Those good old times," when the travelling dentist set out on one road and returned by another; when dentists were socially ostracized; when it was a disgrace to be seen in a dentist's office, or even be acquainted with him. Perhaps they did not believe with the Quaker," an eye for an eye, a tooth for a tooth," and if God had deprived them of a grinder it was a sin to replace it, and they tried to conceal from all their fellow beings that they had ever need of a dentist.

What sublime faith and courage must have been that of the fathers in dentistry, how little encouragement to Harris to write his "Principles and Practice," or establish the first dental college. All honor to him, but he died a poor man, and the dentists of the great United States raised the munificent sum of five hundred dollars for his widow!

How our forefathers worked and sweat over the minor operations of to-day; with what care and patience they finished their work. It is wonderful to think that such operations could have been performed with the appliances of that day. The early dentist not only made his own instruments but carved his teeth from those of neat cattle, the ivory of the elephant and the tooth of the hippopotamus; they were porous and easily absorbed the saliva, becoming foul in a short time. Then came the porcelain teeth, incorruptable teeth they were called and poor things they were. The French were the first to use porcelain, but it is principally to the American dentists that we are indebted for that which the French labored so long in vain.

In the early times every man carved his own blocks and baked the teeth in a porcelain furnace; not one of the modern affairs a foot high, but as large as a goodly sized range. It consumed two bushels or more of fuel and any amount of attention, the heat making it impossible to stay in the same room and exist. What a comparison to one of the modern gas furnaces of to-day!

After a time came the discovery of vulcanite. It was not without a struggle that it made a place in dentistry, and it is a question to-day whether or not it was an unmixed blessing to the dental profession; of its value to the masses there can be no doubt.

Vulcanizers in those days were fearfully and wonderfully made, some of them weighing fifteen hundred pounds. They consisted of two apartments, a boiler and a steam chest. It was supposed that rubber could only vulcanize in steam, until the accidental dropping of a case in water demonstrated the contrary. In the best vulcanizers of to-day we see a return to the old idea,—one chamber for water the other for steam. History repeats itself. Steam as a motive power we have thought pre-eminent, but in the harnessing of Niagara we see a return to water power. Freight steamers drove the sailing packets out of existence. It is claimed that for bulky imperishable freight, large sailing packets are more economical, therefore more desirable than steam vessels. The ancient fashion plates of which we have made so much fun, have been rejuvenated and we think them charming. Fashions change and history here repeats itself. So in dentistry, the old makes place for the new; a decade and the old is new again,—so improved, however, that it deserves its rejuvenation. We are apt to look onelectricity in dentistry as new and modern, yet Doctor W. G. Oliver of Buffalo, in 1859, advocated the use of electricity in surgical operations, for extracting teeth, and obsunding sensitive dentine. He even demonstrated the use of his apparatus with considerable success at several surgical clinics.

What would we do without the handy little mouth napkins and the napkin clamp, and yet, they are a relict of the old table napkin, when the mouth was pryed wide apart and held so till the operation had been completed with soft or non-cohesive foil, that being the only material used for permanent filling. It was not until Doctor Dwinell publicly advocated the use of cohesive foil that the great bugbear of "sticky gold" was removed. Books and books of it in the past, have been returned to the perplexed foil beater as unfit for use, notwithstanding which cohesive foil has replaced to a large extent its rival. Soft foil can be used to great advantage in crown cavities with proper instruments. A soft foil filling can be placed in one-third the time necessary for cohesive foil. No greater blessing has ever been conferred on the dental profession than the engine, and yet it is abused—especially where power is used. More pain is caused by heated instruments than by the excavating. Burs run at a high speed, for that matter at any speed, should be raised from the cavity. Excavators, chisels and hand burs were used before the advent of the engine, and it seems to be questioned if we to-day use them as often as we should. In the preliminary preparation of a cavity, for filling, nothing equals a sharp, well shaped chisel for removing the enamel and overhanging dentine. They are rapid, effective, and most people prefer them to the engine. They make a great deal of noise, but it is mostly noise and very little hurt. Once accustom your patients to the use of the chisel and they will not willingly return to the engine. In the use of the bur we have almost forgotten the use of the excavator, but it is sometimes surprising how quickly a cavity can be prepared with a well shaped excavator. Even the old hand bur can be used to advantage occasionally; they are very convenient in opening up cavities. In deep seated decay, where the pulp is nearly exposed and a leathery decay exists, and where the excavator exposes the pulp in spite of you, the old hand bur seems to fill the bill.

I doubt not that many of the graduates of the past ten years have never heard of the old fashioned foil crimpers, yet I find them of value in the preparation of ribbons when that style of foil is desired; to me nothing could be handier.

We are all anxious to be progressive, and take not a little pride in being so. Let us be progressive but not forget the many little appliances that have been used in the past and can be used to advantage occasionally in our practice of to-day. One can not but wonder how those who came before us ever endured without the multitude of appliances that have become necessary for us. How did they ever get along without the rubber dam, the modern dental chair, the engine, and the thousand and one little contrivances that make dental life worth living: One thing is certain, our forefathers not did live up to the full as their children are living, and we, in turn probably, are not living as our children and grand children will live. Regretting the past is nonsensical and foolish. Each generation as it comes on the stage takes what is given it and makes the most of it, reaching all the time toward the future and not toward the past.

The present, the present is all thou hast
  For thy sure possessing;
Like the Patriarch's angel, hold it fast
  Till it gives its blessing."

The mistaken sentiment contained in the expression, "Oh, those good old time!" received a rebuke, not very effective it would seem, 3000 years ago. No less a personage than Solomon uttered it when he said: "Say not thou, what is the cause that the former days were better than these? for thou dost not inquire wisely concerning this."

TO STUDY ITS ORIGIN.

In a review of Bouchard's "Auto-Intoxication in Disease," the *Buffalo Medical and Surgical Journal* says : The author of this work begins with an assertion that has a volume of common sense in it. He says that medicine, after having devoted herself for many years to the verification of symptoms, to the research of anatomical lessons, and to the study of pathological physiology, comes finally to the study of the origin of disease. It is only lately that physicians have begun to recognize that putrefactive processes in the intestinal canal, and the development of physiological and pathological alkaloids, play an important part in causing many diseases, the origin of which has been hitherto little understood or greatly misunderstood. How often it happens that comparatively sudden death occurs in individuals in apparant good health, where carefully conducted autopsies fail to reveal lesions that account for the fatality. In many such cases, no doubt, toxines enter the blood, and pervert or destroy its nutritive qualities.

THE DENTAL DEGREE.

There seems to be a tendency in some quarters looking toward a change in the name of the dental degree. These are some of the questions which naturally arise concerning the subject. First—What is the object of the change? And, will the profession be benefited by a change? There has been some discussion as to whether "Doctor of Dental Surgery," represented by the letters "D. D. S.," correctly describes what dentistry is. It is said by some that there is not enough of surgery, as practiced by the dentist generally, to permit the word surgery to enter into the name.

Others claim, and we are of this opinion, that scarcely an operation can be performed in the mouth without involving some principle of surgery. The intelligent dentist does more surgery every day than any general practitioner of equal practice in a month. Besides the ordinary operations on the teeth and gums, there are the treatment of fractures of the maxillary bones, the surgical operation for the removal of necrosed and carious bone, the section and exsection of nerves for the cure of neuralgia, the surgical treatment for affections of the maxillary sinus, etc., etc. Certainly if these were all, they would justify the use of the word surgery.

If there should be a change it should be in the word "Dental," as this word makes the meaning apply too specifically to the teeth. In its place "Oral" would better answer the requirements ; as it would include not only the teeth, but all operations upon the teeth and adjacent tissues. Degrees now in use other than that represented by D. D. S., and those proposed to be adopted, are not more expressive or more clearly indicative of the dentist's field of operation, nor are they so euphonious.

They do not mean to intelligent members of the profession that persons possessing them are better equipped, than those having the older degree. In the State of Illinois, for the small sum of two dollars, any one may buy a permit from the Secretary of State, to organize a school of dentistry. It is not at all essential that he should know the difference between the orbicularis oris muscle and the rubber dam. Such a school has a right to confer any degree it pleases, whether it be represented by D. D. S., D. M. D., M. D. S., or what not.

We venture the assertion without being invidiously disposed, that those reputable colleges granting other than the D. D. S. degree, do not graduate a greater per cent. of intelligent practitioners than those conferring the old degree. Should they confer the D. D. S. degree, their students would take just as high a position in this country or in the world, for that, as with their present degrees.

Dentistry is the youngest of the professions, but it begins to assume proportions which indicate its adult life. Doctor of Dental Surgery is, perhaps, not a perfect name, but it has, from the time of its adoption, met with but little serious opposition from the profession at large. It is generally accepted as the American degree.

It is beginning to be understood by the laity as the distinctive title of dentists, as are the degrees, Doctor of Medicine, Doctor of Law, or Doctor of Divinity, of the professions to which they belong. Dentists should earnestly express themselves in favor of the old D. D. S., degree. No good can come from a change, or the multiplication of degrees, but infinite confusion must result.—*Review.*

CRUSHING MEASURE.

Dr. Patrick presented his instrument called the "natho-dynamometer," for testing the strength of the human jaw, and said that we have often heard of the enormous strength of the human jaw. A paper presented somewhere some years ago put the estimated strength at six hundred to eight hundred pounds. He had stated that he did not believe it could be over one hundred and fifty pounds. After that statement he felt called upon to prove it, and invented this machine to make tests. He made levers, the end of one being a pointer to move on a vernier to record the amount of force. He found that the greatest power was exerted in the region of the first molars, and that the farther we got from that point the less the power became, so than the anterior teeth were more wedge-shaped in order to be more effective with less power. This is in harmony with the law that mechanical force and jaw-movement dictated the forms of the teeth.

He experimented in cracking nuts. He found that some required more force than others to break, and that every nut required more force in one direction than in another. He found that the black walnut cracked sideways with two hundred and fifty pounds, and at the seam it required five hundred pounds. So it was with other nuts. He experimented with different kinds of nuts on animals, and found that they would turn the nut in the mouth to find the weakest point: He had seen the hog do this. He found few men who could crush a hickory nut.

He had tested many, and found that the greatest crushing power of the human jaw was not over one hundred and thirty pounds ; but this power is reinforced by the cusps on the molars, which act as wedges and thereby increase the crushing force. His instrument measured the jaw power, and he had had the scale tested by the Fairbanks company in order to prove the measuring power and make the scale exact.—*Cosmos.*

TYPES OF PHYSICIAN.

A LIAR AND HYPOCRITE.

Another type of a physician was Dr. H. I practiced in the same village where he was located for a number of years. He was a well educated physician, and I think a literary graduate also. He was however, reckless, careless, unprincipled and characterless. He at times would drink to excess. In spite of all this he was a good physician. The saying is, "Give the devil his due." He was a devil sure enough, but a good doctor withal. When at his worst he could amuse and control his patients. I do not believe I ever knew a physician who could inspire more courage in a patient, than could he. It seemed to make little difference whether he told the truth or not, his patients seemed to place confidence in him. He was sent for from all over the country as counsel, and his decisions were looked upon as final. If he told a lie it was usually a good one. I believe he was the most plausible liar I ever knew. He certainly made a good diagnostition. He took great pleasure in disparaging the ability of other physicians. He was one grand hypocrite. He would be friendly to your face, but cut your throat as soon as your back was turned. He was as sweet as sugar when you were present, but the sourest kind of acid in your absence. Until I knew him very well I wondered how it happened I was so often discharged from cases where he was called in consultation. In my presence he would endorse all I had done and was doing, yet the next morning I would be notified that my services were no longer required. I finally discovered that after I would leave, he would condemn everything I had done. He would change or pretend to change the medicine, and convince the patient and friends if the patient took another dose of my medicine he would assuredly die. As I became better known and more generally established, having acquired an extensive practice, I refused to counsel with him. If the patient would insist upon his being called I would withdraw from the case. It was not very long before I could control consultations, and therefore I called other physicians. The old gentleman began to see I was obtaining the inside track, and was winning the race. My not calling him in consultation was materially interfering with his income also. He came to me finally and promised to deal squarely with me. So far as I know he ever after did the right thing. Occasionally I would find him tripping. I believe I was the only physician that ever got the best of him. I desired his counsel. Although an old hypocrite his opinions were good and of benefit to the patient. He was what might be termed a successful physician. He seemed to be capable almost by intuition of diagnosing and prognosing disease. His methods of treatment were far in advance of his associates, in fact far in advance of the times. He had not the first principles of honor or veracity. When he found he could do me no particular harm, he became a very warm friend. He rescued me from many a dilemma. I learned many useful things from him; things which have been of material advantage to me during my professional life. I was sorry, indeed, when I noticed a few days ago the announcement that he had been gathered to his fathers. He died at the ripe age of eighty years. Peace to his ashes.

A MAN OF TACT.

Another physician with whom I was very well acquainted was Dr. V. He illustrates a far different type of a successful physician. He had very little general education and still less medical knowledge. That is to say in his youth he attended neither school nor college very much—school some, medical college I believe not at all. He is endowed by nature however, with tact, cleverness, and application. He has the faculty of making all out of a case there is in it, and often very much more. His patrons place perfect confidence in him. Whatever Dr. V. says is superior to law and gospel. He inspires confidence in all his patients. His patients respect him highly. A patient esteems it a privilege to be helped out of the world by him. They are possessed with the idea that all has been done that can be if he has treated them. I have known him to make some of the most egregious blunders according to the books, yet he is a hale fellow, well met, with all his neighboring physicians, and it matters not what mistakes he makes, they will not expose him, but on the other hand will cover his tracks so they cannot be seen. As a rule, however, he is a very successful physician. He cures fully as many as the best. If they have to die, he eases them out of the world by flattery, which comes naturally to him. Many of his prescriptions are haphazard and incompatible, unscientific in the extreme, yet in spite of all this his patients recover. I nearly became sceptical in regard to any scientific treatment of disease, when I noticed that his treatment was contrary to all usage, contrary to all theory, contrary to all medical science as taught in books and medical colleges, and yet his patients would recover fully as speedily as they would under the best educated physicians, and most approved methods ; yes, even in fact more rapidly. I began to ask myself the question, is there really any science in medicine, or is it empiricism altogether ? I have asked myself the same question often since.

HAS A "CINCH," AND HORSES.

I cannot believe as yet that the practice of medicine is a perfect science. Much of it certainly is empirical and guess work. Surgery in many respects is quite an exact science. Yet we frequently notice that even in surgery many things which were in vogue two years ago, are condemned to-day, and that which may be the prevailing ideas of to-day, may not in a year from to-day be considered legitimate surgery. Medicine to a certain extent is becoming a science. As yet, however, there are many things which may be set down as not proven. Dr. V. has a very large practice, limited only by his lack of ability physically. He possesses as Dr. H. did, whom I have above described, a wonderful ability of diagnosing and prognosing cases. His materia medica is very limited. He does not use more than a score of medicines, yet is fully as successful with his small number as we are with the hundreds we make use of. I am of the opinion we are using too many different remedies. We can have but an imperfect knowledge of so many. I find I prescribe a much less number than the majority of physicians. When I find a medicine will produce certain desirable results, what is the use of discarding it and fleeing to something we know not of. We should, I believe, be governed in the use of medicines from our own experience, and by that of those on whom we can rely. It seems to be an easy matter for the manufacturer of a new medicine to get scores of endorsements from physicians in regard to its merits. I do not know how this comes about, but I do know that a remedy is not long before the public and physicians before I receive circulars from the manufacturers, containing testimonials signed by doctors claiming every virtue possible for it. These names are not always ficticious either, for amongst them we find names of physicians of prominence, and even editors of medical journals. There is a St. Louis editor of a medical journal, who, I think recommends all new remedies. Probably there is a reason for his doing so, as the manufacturers no doubt advertise with him. I do not understand how these various M. Ds. can reconcile their puffs of these secret remedies with the code of medical ethics. The claim is made they do not recommend any medicine made from a secret formula. Can any one make Fellows' Syr. of the Hypophosphites or Lacto Peptine from the formulas published? I pause for a reply. Dr. V. is still in practice. Had I the power to please the people he possesses, I would to-day have dollars where I now have cents.

A GOOD MAN INDEED.

Another physician of my acquaintance represents a far different type. He is a literary graduate, as well as having diplomas from several medical colleges. He is extremely well versed in medicine. He is a religious gentleman, a sincere Christian, I believe. He takes a deep interest in everything pertaining to education and Christianity. He is charitable; in fine, he is a kind and lovable gentleman. He does not seem to be proud of his superior knowledge. A poor man, if sick and needy, receives just as much attention as does the rich and affluent. It matters not whether the patients be Jew or Gentile, Protestant or Catholic, they are all served alike. When called to see a patient, the first thing he does is to call upon Almighty God to aid him in treating the case. He humbly acknowledges he is but an agent in an over-ruling powerful hand, an instrument only. If the patient recovers he gives God the praise. If the patient dies he feels conscious he did all he knew. He is an extremely successful physician and idolized by his patrons. He is very reliable in consultation, positive in his views, yet lets you down very gently if he differs from you. He seems to soothe and comfort his patients. He has accumulated great wealth, still is just as active in practice as he was when poor. His idea is to wear out and not to rust out. Rust would wear him out more rapidly than wear, and while wearing out he is doing some good to his fellow-man.

SLOW BUT SURE.

Another very successful physician of my acquaintance is Dr. C. He is very much sought for in consultation by his neighbor-physicians. He is able, learned and almost always correct in his diagnosis and prognosis. His treatment is as near correct as it is possible to be. I believe he is one of the most accurate diagnostitions I ever saw. He is one of the slowest I ever was acquainted with in coming to conclusions. He arrives at his opinions by a method I should call exclusion or elimination. For instance, the case is valvular disease of the heart, Dr C. is called in consultation ; he will commence his examination perhaps with the brain. This organ is examined closely, no disease being found, brain trouble is excluded. He will then take up some other organ, examine it carefully, if not diseased it is also excluded. In this way he may pass over the entire system before reaching the part affected. I have known him to spend an hour in examining a patient. When he does arrive at a conclusion it is a correct one. I have sometimes felt sorry for the patient having to undergo such a tedious examination. I do not know that I ever saw a patient injured by it. I believe a careful, rigid examination of every patient essential in order to prescribe understandingly. There is altogether too much guess work, too many superficial examinations in the diagnosis of disease. Careful and particular examinations is one benefit to be derived from polyclinic or post-graduate schools of medicine. In these schools the examinations are thorough and complete. Every alteration or change from a normal condition is brought before the class and explained. These searching examinations benefit the doctor greatly. Yet I am satisfied if a physician has the ability to make a speedily diagnosis ; it is better for the patient. In doing this, however, no mistake should be made. I also believe that in surgery the more speedy the operation is performed the better it is for the patient. Here fault may be found with the post-graduate schools. The operations in these schools are performed slowly in order to allow the student to observe the various minutiæ of the operation. In order to avoid nervous shock and prostration and to conserve the physical forces, surgery should be done as rapidly as possible ; not with unnecessary haste, but as speedily as can be, and yet do justice.

GOES TO MEETING AND IS A CANDIDATE.

Another type of the successful physician is the medical association physician ; what I mean by that, is a physician who attends medical associations and reads papers, and is elected to office by these societies. He obtains an advertisement in the secular press; reportorial to be sure. By this means he manages to keep his name before the public. I have frequently thought that many medical associations have been started to give a certain few a chance to advertise themselves. All this is done within the code of medical ethics. Sometimes the code appears to be very elastic, like rubber, capable of being greatly stretched. Now I do not consider that legitimate advertising is very sinful, yet a question might arise, "Of what does legitimate advertising consist?" Dr. Wythe, of New York, informed me a few years ago, that in that city reportorial interviews were considered a violation of the code; I mean for the secular press. He told me he was condemned once for an account of an operation which he performed appearing in the secular press. In order to clear himself he had to produce the reporter, who stated the report was made without the doctor's knowledge. I opine that the majority of cities are not so particular. If this is really a violation of the code, how many in most cities are guilty? Perhaps it is best not to answer this pertinent question.—MONROE (GEO. J.), *Cincinnati Medical Journal.*

WHO SHALL EXTRACT?

Dr. Richards, Knoxville, does not extract teeth at all. He sends his extractions to "the other dentist." Many people cannot afford constant operating to keep the teeth up to efficient standards, and wholesale extraction is with such people sometimes excusable. In the matter of destruction of the teeth by the quack, the victim sometimes learns more by one experience with them than he will by our preaching for years. One experience with a "painless" nostrum-user will usually have the effect of making him give attention to the preservation of the teeth that remain.

Dr. Morgan finds it necessary to extract teeth, and has for years. He always relieves pain when possible. Somebody has to extract teeth, but it must be done conscientiously, because in some cases it would be morally wrong.

Dr. Crawford. Extraction is an operation that will be necessary for all time. The matter of the unrestricted extraction of teeth, with which our laws do not interfere, is giving the State boards a great deal of trouble Our board has been frequently asked if it is a violation of the law for unlicensed men to use the cocain-nostrum anesthetics. In other words, can a man travel over the country and extract teeth recklessly and unmolested under the clause in our law which reads, "Provided nothing in this law shall prevent any one from extracting teeth," and use a nostrum anesthetic hypodermically? After extensive discussion of the matter the Tennessee board had decided that the insertion of a hypodermic needle was a grave surgical operation, and in unskillful hands was very dangerous; that it was a separate operation from the extraction of teeth, and that its use by unlicensed men should be prohibited.

Dr. Freeman had some clear convictions regarding our duties to our patients. He thought Dr. Richards shirked his duty when he refused to extract teeth for his own patients and sent them elsewhere. There is a sympathetic relation that must be established between the dentist and his patient. A man is not honest who will not try to convince his patients as to what is best for them, and he must be able to give them the very best that can be done for them by the profession. The man who will not extract teeth when it is necessary—and it is some times the best and only thing to be done—shirks a responsibility. It is your first duty to save what teeth you can; but if you cannot save a tooth, even with the advice of others, and it becomes necessary to extract, do not send them away because it is a disagreeable operation, but face your duty and perform it.

Another matter is that he always feels a disgust when he puts in an amalgam filling. It is a disgusting and slovenly operation, and one we should never do when we can possibly avoid it.

We should give time to educating people in regard to the possibilities of our profession. We should not fail of our duty because an operation does not pay. We should place the whole matter fairly before the patient, and if he refuses to have the best thing done we will have discharged our responsibility at least.

Dr. Richards had just as much appreciation of the teeth as any man. He prefers to send his patients to those who are experts in extracting. We must save the teeth whenever possible, but extraction is, of course, sometimes necessary.—*Cosmos.*

ALUMINUM PLATES.

I have given up vulcanite! Anyone who must have a rubber plate will never get it from me. I have done forever with the nasty, clumsy thing, excepting when I use enough of it to attach teeth to metal plates.

For several years I used cast aluminum plates, and, I confess, I had so many failures I returned to vulcanite ; but now I am using aluminum exactly as I would use gold, for partial as well as for upper sets, and I have not only satisfaction myself, but I find my patients coming to me and wanting to get their vulcanite sets renewed for this lightest and pleasantest of all metals for the mouth. With care in striking up the plate I can make it yield to every obstruction. I make holes through it, and I secure pertect attachment.—*Dominion.*

TECHNICS.

Dr. Dale, Nashville, said : The dental department of Vanderbilt University now uses the method of dental technices introduced by Dr. Cattell, Chicago. Teeth are dissected by being cut in different sections and at various depths. A tooth is fastened to a block of wood, the block is screwed in a vise, and the tooth is cut partly away. The block is taken out, the cut surface of the tooth is inked from a pad and an impression made on paper. An assortment of these impressions shows the arrangement of the enamel, dentine, pulp canals, and other structural characteristics. The students are required to print the teeth in series, with sections of all the teeth and proper classification. This gives the student a knowledge of the structural divisions, and illustrates the therapeutic procedure. The student is required to fill the root-canals of teeth set in plaster, which are then dissected to see how the operation has succeeded.

Dr. Gray, Nashville, said : All students should be interested in dental technics, but this instruction is carried out farther in some colleges than in others. He would go a step farther than the doctor does in filling teeth out of the mouth,—then carry them on to the living subject. The colleges are constantly carrying instruction farther and doing things that have never been done before. The schools are for experimentation and instruction in the use of all kinds of tools and materials.

Dr. Hunt, Iowa City, said : The technical system described is very excellent, and its practical value is fully appreciated in colleges where the method is in use. Dry teeth should be saturated with water to which twenty per cent. of glycerine has been added. Then drop the tooth into beeswax and turpentine. The water and glycerine expand the pulp ; the beeswax and turpentine fill up interspaces and make the structure of the tooth more apparent.—*Cosmos.*

AN ANTI-DISSECTION AND VIVISECTION WRITER.

One of the kindest hearted of men is Geo. T. Angell, and one of our most enterprising exchanges is "*Our Dumb Animals.*" It contains many nice little stories of kindness to animals, of sagacity, etc. Whatever it says and does in a gentle spirit is mostly good. But, by reason of unbalanced thought, many flies are mixed in the ointment. This kind hearted man sometimes seems devoid of common sense when he attacks cruelty, real or imaginary. Along side of the beautiful persuasive stories, he prints the most infamous rot regarding vivisection, dissection, check-reins, etc. At the same moment, the paper is a white-winged messenger of peace, and a crazy bomb thrower. Thousands, who could be benefitted and pleased by its virtues, will discard it in disgust as of "no good" when they see its faults. By its indulgence in crankiness it curtails its power for good many fold, greatly to our regret. Why be so unbalanced in your thoughts, Bro. Angell? You violently antagonize the work and opinions of men of high standing, when, were you more modest you would go slower. You alienate the sympathy of many influential men when you ought to prize it. You make statements so exagerated as to tempt people to give you the lie. You say that putting a mouse under a bell-glass and exhausting the air in a public school is "useless, barbarous and demoralizing" *to the teachers.* You say "it might be useful to teach children to carve chickens," but you denounce all dissection of cats even in high schools because, as you say, "not over one child in a thousand has a bent for zoölogy."

Mr. Angell sends out a "beautiful placard" containing the exhortation: "Don't ride in any vehicle drawn by a poor-looking-horse," but in all its literature we find no allusion to withdrawing patronage from poor looking men, women or children. Why not be consistent in your folly, Mr. Angell?

Illustrations might be multiplied of these unfortunate lapses in common sense. The one which really led to our writing this article may close our remarks. In his April number is an aiticle of nine lines headed "Cornell University." He first quotes some one as saying that Prof. Bert. G. Wilder in his "Physiological Practicums" has published explicit directions for examining portions of the cat, and the heart, eye and brain of the sheep as an aid in the study of elementary physiology. His comment thereon is: "The whole freshman class at Cornell came near being murdered recently by scientific suffocation, which caused the death of the poor woman serving them." We call on Mr. Angell in the name of every friend of this distinguished anatomist to either withdraw or to justify this inuendo which on its face appears senseless and cowardly.—*The Microscope.*

SAVING MATERIALS.

When I was a student I thought my tutor awfully mean, because he made me carefully save every scrap of wax, and things I called rubbish. We had a "rubbish drawer," into which all "useless" articles were put. "They'll be wanted sometime," I was told ; and it was wonderful how often the prediction came true. The idea of not wasting plaster which was only two dollars a barrel, and of being so petty about bits of vulcanite, etc., seemed to me the height of narrowness and meanness. I often feel grateful, to-day, to my tutor, who is dead and gone, for the lessons he taught me in economy. The principle got so bred in me that I believe I save as much rubber, plaster, wax, etc., as most men use.

I think there never was a time when we had such wasteful students as now. My experience of the average Ontario student is, that he is a very nice young man indeed, but that he rarely consults the interest in this way of his tutor. I have seen the most reckless waste of vulcanite in packing, which showed not merely ignorance but pure indifference. The fact is, students in the office are a nuisance. No money compensates a dentist for the abuse of his tools, carelessness with his lathes, etc., and the direct damage to his work by the boys who think because, perhaps, they have paid you a hundred dollars or so, they have a right to be careless, to come and go as they please, and to waste as much of everything as they use.—*Dominion.*

TO FIT A LOGAN CROWN.

It is a well known fact that the improved Logan crown is the best porcelain crown upon the market. The great objection to it is in the fact that it is a mere matter of guess work when they are ground to approximately fit, for we never know when they fit by the old process.

Having this before me, I have originated a method by which to expeditiously and accurrately grind them to a perfect apposition with the abutment of the root to be crowned.

First prepare the face of the root to be crowned as desired, and having selected a suitable crown bend the pin, if necessary, so as to make a proper alignment.

Next place a piece of parafin wax around the pin next to the porcelain ; then take No. 60 tin foil and trim a disk a little larger than the abutment ; then pierce the centre of disk with the crown pin, pushing disk down until it touches the wax, place crown on the root and force it to place, the wax driving the tin foil disk to a perfect apposition with the abutment of the root. Remove crown with the wax holding the tin foil disk in position, and with a pair of sharp-pointed scissors snip the edges of disk slightly all around. Place a small pellet of wax on end of pin, then insert pin up to the porcelain in quick setting plaster ; after plaster hardens warm crown and remove, the snipped edges of disk serving to hold it in position ; clean off wax and replace crown on model and you have a perfect metallic surfaced model of the abutment of the root to which to grind, with a perfect view of every surface of the root, the wax which was on the end of the pin allowing it to penetrate the plaster as the porcelain is ground away. By this method a Logan crown can be made to fit perfectly in ten minutes and no guess work. Try it once and you will be more than satisfied with the results obtained ; this is also applicable to the bicuspids.—HINMAN (T. P.), *Busy Dentist.*

EXTRACTION BY INOCULATION.

In concluding the great pyorrhœa debate at Buffalo, Dr. Van Woert said : I wish to make a confession, to establish the truth of the theory that we can inoculate pyorrhœa alveolaris. I made a plate for a lady six or seven years ago, and she presented herself to me in eighteen months for a new one. She had, at the time I made the first one, two superior canines. They made a disagreeable, ugly looking mouth, and I wished to extract them, but she insisted on leaving them in her mouth. When she presented herself the last time, I thought to myself that here was a good chance for an experiment. The gums were healthy, the teeth were healthy, but they should be removed, and as I had two or three marked cases of pyorrhœa on hand at the time, I thought I would try and see if I could get rid of them by indirect means. I told her there were a few deposits that I would have to remove, and I went to work with pyorrhœal infected instruments, that were covered with septic matter. I can show you by my books that she soon had a full denture, and the canine teeth were taken out with my thumb and finger. When I first related this I was taken to task for it. I will admit it was a direct case of mal-practice, but it was justifiable. The cause of science demanded it. I wish I had two or three more such cases, and I would do it again.—*Dental Practitioner.*

THE SEAT OF GREEN STAIN.

Every one has seen and had occasion to remove the so-called green stain, the "moss" of the gamin, from human teeth, in both the infant and adult, the former particularly. This deposit of pigment is said to be on, or rather in, the enamel, and this is true within certain limits. It does affect the inorganic element of enamel, but to a much less extant than is the case with the organic part or matrix, and not at all where the pigment is small in quantity and the stain correspondingly slight in degree. That this is the case may be determined in two ways: First, make a vertical antero-posterior section of a faintly-stained incisor; finish one side perfectly, and cement that side with old balsam to a glass slide; when the balsam has become hard, grind the opposite side, examining carefully from time to time, until the section has been reduced as nearly as possible to the thickness of an enamel prism. It will now be found that the greatest deposit of pigment is next the surface; that it grows fainter as we follow the dippings of the matrix into the enamel, and that it is faintest, or not to be detected at all, in the inorganic portion. Secondly, cement the well-finished central or dentine surface of a cross-section of green-stained enamel to a glass slide in the manner described, and grind, frequently examining it. Note carefully its appearance before grinding, and compare with the appearance of the section when but slightly ground. The result of the first application of the wheel will be the indistinct outlining of the rods, the centers appearing light. These light spots will continue to increase in size as the grinding proceeds, until the pigment is narrowed down to the matrix itself. Thus we see that this membrane and its processes in the form of matrix of enamel is the seat of the deposit of pigment, the favorite place, and that its appearance in the inorganic portion is merely incidental.—*Cosmos.*

GETTING ACQUAINTED.

One never knows a man until he has seen him in his private retreat, in his den, in that portion of his professional domicile that is not kept for visitors, and where he spends the time that is peculiarly his own. When one calls upon a professional friend, and is seated in the reception room devoted to strangers, he is making little progress in forming an acquaintance. We have made such calls in foreign lands, where we were received with all the courtesy imaginable, and when we retired we felt that we knew the man no better than before. There are friends whom we have met annually for many years at our professional meetings, but whose acquaintance we have really never made.

But when we have visited some dentist who took us into his operating room, or better still, into his laboratory, and we have an opportunity to see with what he surrounds himself when he is beyond the observation of his ordinary acquaintances, then we have felt that we knew the man as he really was. It brings the visitor very near, but it is a dangerous experiment to try. A single glance will enable the keen observer to read his man completely. It is not alone the evidences of dirt and general untidiness which will proclaim him a slovenly operator, but the condition of his instruments, the little evidences of ingenuity in making the most of his surroundings, the manifestations of care for the comfort of his patients, the appliances for facilitating work and the means just at hand for perfecting operations, the general air of serviceability and "handiness," all tell the tale of the professional rating of their possessor. The books and journals that are just at his elbow, the papers and evidences of thought, each proclaims the tastes and habits of its owner.

It does not matter that the furniture is plain, and the carpet a cheap one, but the state of his laboratory will a tale unfold that cannot be denied. Even the condition of his lathe will indicate whether he is a careful and competent mechanic, or a mere botch. It will be useless for the dentist to attempt to cover up the indications if his visitor be an observing man. The thing will out, for every file and scraper will have a voice when one visits an operating room or a laboratory that indicates that its owner knows what a good tool is and when it is in good order, and that he has sufficient of ingenuity to get the greatest amount of convenience out of his surroundings. When one has looked over the desk and observed that its owner keeps the run of the current literature, that he has the principal text books and that they give evidence of study, what a feeling of respect and admiration comes over him, and how immeasureably that man has grown into his esteem, and how well he feels that he knows him. Such visits give a pleasure that no formal reception, no elaborate hospitality could convey, for one feels that he has been admitted to the intimate companionship, the inner life, the secret temple of a congenial spirit.—*Dental Practitioner.*

THE CELLAR NUISANCE.

It may be safely said that no one defect in household sanitation is more overlooked and more potent for mischief than the condition of the cellar. Those with extensive experience as inspectors of houses in Tennessee cities maintain broadly that cellars are a nuisance, and should be abolished.

Especially is this true in those parts of the State where stratified rocks constitute the underpinning of the soil, as in the central basin of Tennessee and other large areas. In all these sections a cellar of ordinary depth is sure to be more or less damp. Very often it is almost a wet weather spring, as is evident in Nashville and elsewhere. Decaying joists and floorlng from this cause cost large sums annually. Of course much damage is done to health. Neuralgia, rheumatism, bowel affections, and above all, consumption, are much increased by these wet pits—*Health Bulletin* (Tenn.).

POSTS WITH WOOD-SCREW WORM.

I know you will all agree with me that the thread which we make with the usual screw tap, used in mechanical dentistry, is so fine, and the bite of the screw so weak when gold is used for this purpose, that we cannot consider a post so inserted in the nerve canal, of sufficient strength to bear the resistance we require. It was in recognizing this fact that I commenced to look about for means to overcome the difficulty, and I was induced to try the utility of the screws which I submit to your notice to night. I have brought a few with me to distribute among you, in the hope that you will be good enough to try for yourselves the firm and solid post such a screw when properly inserted will make. The screws, you will observe, are made with what are called a wood-screw-worm, and are made of iron, and heavily electro-gilded, so as to prevent any possible oxidation of the metal, and the thread of the worm being so sharp, you can easily understand the facility with which such a screw will cut into the dentine of the tooth. My usual mode of procedure in inserting these screws is to select a drill a size smaller than the screw. I mean by that, suppose for instance, you take the screw you propose using and notice the hole in the screw-plate which exactly fits the screw. You then select your drill to fit the hole next smaller on the screw plate and, having taken this precaution, you may with safety insert your screw without any risk of splitting the tooth. I am quite sure you will, most of you, be surprised to find what an amount of force it would be necessary to use in twisting these screws into a root of a tooth before the root will split, and it is with a view of testing this for yourselves that I have brought a few with me. I would, however, impress upon you to see that you have the conditions approximate as nearly as possible to the conditions of a tooth in the mouth. I mean by that, that you should try the experiment on a recently extracted tooth or a root which has been previously soaked in water. I do not think you would have a fair test if you were to take a tooth which had been extracted sometime and allowed to become perfectly dry. We might assume in this latter case that the tooth would be more brittle and the dentine not so soft. I have brought with me to-night a few screw posts inserted into the roots of teeth, and I feel sure you will say we could not wish for anything more solid upon which to build a gold crown or porcelain-faced crown.—ROOKE, *Dental Record.*

PASTEURIZED MILK.

When the fact was discovered that milk is frequently a means of communicating the infection of typhoid fever, cholera, and other germ diseases, the suggestion was soon made that as a means of preventing these infectious diseases milk should invariably be sterilized by prolonged boiling. Later experiments, however, have shown that the prolonged boiling of milk to some degree modifies its constituents and lessens its value as a food. The fact that boiling milk has the tendency to produce inactivity of the bowels, is one with which even the laity are quite familiar. Pasteur, by careful experimentation, discovered long ago that heating milk for ten or fifteen minutes to a temperature of 160° will destroy the pathogenic microbes which it contains, and to such an extent destroy those microbes which set up decomposition in milk and allied substances, as to considerably increase its keeping qualities.

Doubtless most physicians are aware of this fact, and yet the frequency with which we hear *boiled* milk recommended as an article of food, especially for young infants, leads us to believe that the profession do not so generally utilize this important fact as it would be in the interest of their patients for them to do. It is rarely necessary to recommend *boiled* milk for a child, or indeed for a patient of any age. Instruction should be given that the milk be heated to a temperature of 160° for fifteen minutes. After heating, the milk should be cooled as quickly as possible, and kept cool until used, when it may be heated just before taking.—*Modern Medicine.*

FORMALIN.

Formalin is the proprietary name of a 40 per cent. solution of formic aldehyde recently put upon the market by Schering, of Germany. Formic aldehyde is a gas having the composition CH_2O. According to Roscoe and Schorlemmer it was first successfully prepared by Hofman in 1867, by passing the vapor of methyl alcohol (wood spirit), together with the air, over ignited platinum wire; it is also known as the oxide of methene and as the aldehyde and ketone of formic acid.

So far as I am aware formic aldehyde has been put to no practical use prior to the manufacture of the concentrated solution by Schering; and little is yet known of its properties aside from the information contained in the circular issued by him.

Early in October the American agents, (Schering and Glatz, of New York), kindly sent me a small vial of formalin, since when I have been testing it in various ways in the bacteriological laboratory at Howard University, and have undertaken some experiments with it upon the bacillus of diphtheria. These have not as yet been completed, but so far as they have been carried are eminently satisfactory and seem to show that in formic aldehyde we have an agent which is superior in its germicidal action to corrosive sublimate in solutions of a strength which can be well tolerated and which, so far as I can determine, is not injurious.

In bacteriology formalin is thus very valuable for class work for, as pointed out by Hauser, quoted by Schering, plates, stab and smear cultures can be prepared, and when the proper stage of development has been reached, the vapor disengaged at the room temperature from a few drops of formalin will arrest further growth and render the cultures harmless in case of breakage without in any way altering their appearance. Colonies can also be permanently mounted by putting them with a little of the surrounding gelatine or agar on a slide, running a little of the melted medium under the cover, exposing this for 24 hours to formalin vapor and then spinning around a ring of cement to prevent evaporation; or, what is better, as it prevents pressure from the cover, mounting in a deep cell after sterilizing with formalin.

For sterilizing instruments I have used a 10 per cent solution in alcohol. This so far as I can see has no bad effect upon the metal or cutting edge. For sterilizing my hands I have used a ½ per cent. to 1 per cent. solution. It is stated that formalin tans tissue and that when painted in full strength over the skin, the tissue involved separates without suppuration after a few days, leaving a rather deep eschar. I have accidentally spilled the pure formalin upon my hands two or three times, immediately washing it off, without any injury to the skin, but after the prolonged (½ hour) handling of tissues hardened in a 2½ per cent. solution of formic aldehyde, one day I found the skin considerably roughened and somewhat benumbed for a day or two.

I at first thought that the tissue rapidly fixed in formalin might be soaked in warm liquified gelatine or agar, imbedded in one of these media, exposed to the vapor of formalin for a few hours and then cut, but I failed to get thin sections in this way, the imbedding material being too elastic to cut well. It seems necessary either to use a Valentine's knife or a freezing microtome for immediate examination, or to replace the formalin by alcohol, and this by turpentine, cedar oil or chloroform and imbed in paraffine. Tissues so imbedded cut well and the formalin does not affect their staining either in mass or upon the slide as regards any of the dyes that I have yet tried.

It is my opinion that formalin is destined to become an important agent in histological and bacteriological technique ; and its remarkable powers of penetration, its effectiveness and ease of application in solution, spray and vapor, and its apparent harmlessness to tissues and fabrics in the quantities necessary to destroy bacteria, all combine to make it a valuable germicide.—ALLEGER (W. W.), *Monthly Microscopical Journal.*

THE "IMMEDIATE" METHOD ABROAD

Mr. W. H. Woodruff said he was a strong advocate of the immediate method. Though it was a bold thing to say, nevertheless it was a fact, that since 1886 he had practically never dressed a tooth, except, of course, in a case of acute periostitis, or if there were not sufficient time to go into the case thoroughly, and he got vastly better results than from what he called careful and continuous dressings. He could quite sympathize with those who feared to adopt such a course, for he himself began with great trepidation. Mr. Baldwin had said that greater thoroughness in the preparation of cavities, even by those adopting the dressing method, had resulted from the practice and advocacy of immediate root fillers. The immediate method resolved itself into treating a case on a single visit. He would like to ask those gentlemen, who were advocates of the dressing method, if on the second visit the tooth had been found healthy why would it not have been advisable to have filled it on the first ? Further, what would become of the products of the potential cavity, supposing a temporary dressing were placed in the root ? Was it possible by any amount of dressing to get at the contents ? It seemed doubtful if they were ever properly reached by the old method. Of course he was not speaking of those cases with a sinus, where antiseptics could be pumped through. With reference to methods of treatment, he agreed with Mr. Baldwin as to the difficulty of gaining sufficient access to the cavity; it was of the greatest importance to be able to get at one's work; but, on the other hand, he did not approve of enlarging roots with root reamers, at any rate not to any depth down, owing to the risk of passing the instrument right through the apex. He thought Donaldson's cleansers better than hooks, as one could get further down. The instruments should be introduced carefully, and the *débris* flicked up. As to disinfectants, he used peroxide of hydrogen, the action of which would be too well known to need description before that Society. After the root had been rendered thoroughly aseptic it should be well dried out. He should mention that he never used any disinfectants that would coagulate the albumen. For a filling, he used gutta-percha and chloroform, mixing it up to a creamy consistence, and introducing it on some particles of wool by means of a fine instrument. In some cases he passed up a wire and left it there if the root was small, on the top of that he usually put an oxyphosphate to seal in the filling. Sometimes there would be tenderness about the tooth for a day or two, but it nearly always subsided, in fact he had never had to extract a tooth on that account. The application of capsicum plasters or iodine, usually removed the tenderness.

Mr. Redman (Brighton), while he was a believer in the immediate method, nevertheless thought it was most important where there was a discharge of pus to dress the tooth for a few days. The great point was to cleanse the cavity. As to disinfectants, he used hydronaphthal, and found it most satisfactory He generally filled with Weston's non-irritating stopping, packing it in with cotton wool until it was well up to the apical foramen. After filling the root canal he always filled the upper part with phosphate, and then filled with gold or amalgam as the case might indicate. One of the most important advantages of the immediate method was, the free access obtained to the cavities ; he would much rather cut away a good slice of the tooth than run the risk of not being able to get at the seat of the mischief thoroughly. Mr. Baldwin seemed to have gone into the matter so fully that it was superfluous to supplement his remarks. He could entirely endorse his statements, and in the majority of cases he used the immediate method. In conclusion he would say that when he got any tenderness he used the fluid extract of Jamaica dogwood, which, in his opinion, had a far better effect than aconite or iodine.

The Secretary read a letter from Mr. W. Cass Grayston, of Scarborough, in which he gave his experience, gained from every day practice. He wrote as follows :—" Take a septic root, without complications, cleanse it thoroughly with instruments, using, in connection therewith, any of the antiseptics favoured by immediate root fillers, such as peroxide of hydrogen, perchloride of mercury, or carbolic acid. When the root is clean and apparently sweet, fill it loosely with cotton wool, and the cavity of decay with temporary gutta-percha. Now if this cotton wool is removed after two or three days it will be found to smell very badly. Presumably this is due to the dentine giving up the odours of putrefaction, which it had previously absorbed, and which the immediate treatment had been powerless to remove. Is it a clean or scientific operation to cork up this malodorous vapour by immediate root filling ? Probably Mr. Baldwin is right is saying " There is nothing to support the idea that the pericementum can ordinarily be infected through the substance of the dentine and cementum," but it has been stated (I believe by Mr. Kirby) that water can be driven right through a tooth, and, if water, why not infectious vapour ? But granting that the percimentum can only be infected through the apex of the root canal, have we any means of hermetically sealing this opening with a certainty that it will *remain* sealed in the majority of cases ? During the last twelve years I have tried many methods of root-filling, but the perfect method has yet to be discovered. Many materials are difficult to insert, and the work being done—so to speak—in the dark, renders accuracy of manipulation always doubtful. Some materials are easy to insert, and very perfectly fill the root canal for a time, but eventually they are either absorbed, or they shrink, or they become porous. Given a clean and thoroughly disinfected canal, there is no operation in dentistry that will give such good results, for imperfect work, as root filling; but it is necessary for the tooth to be thoroughly disinfected, and we do not get this by the immediate method. I have practiced the immediate method, and for a time, at any rate, achieved success that astonished me, but I have no confidence in it as a general method of practice. Since the value of certain of the essential oils has been brought before the notice of the profession, notably the oils of cassia, cinnamon, and peppermint, the treatment of roots, by the dressing method, has been simplified and greatly improved, and if these oils are used, as advised by Dr. Harlan, it is rarely necessary to spend much more time than would be occupied by the immediate method, and particularly so if the patient has appointments for other teeth to be attended to at the same time. I quite agree with the general principles advocated by Mr. Baldwin, and also consider, with him, that an experience of immediate root filling is most valuable."

Mr. F. J. Bennett had been, for some time past, waiting with some amount of curiosity to learn how far immediate root filling would supersede other methods. He was satisfied that, in Mr. Woodruff's hands, immediate root filling was a great success, but, as far as he could judge, those who advocated it did so upon two grounds, firstly, that it was a quicker method, and secondly, that it was a better method. With reference to the second point, he thought Mr. Baldwin was hardly fair in saying, that one got a better opening and a more thorough cleansing by it ; it was a little hard upon those, who had practiced the orthodox methods with ample success in years gone by. In consequence of that success it was clear that the roots were thoroughly well cleansed, for, if not, it implied that germs must still be there, and he could not see how there could be if the teeth had gone on comfortably year after year. It must, therefore, be granted that under the old methods the work was thoroughly done, and for the new method it could only be claimed that it was quicker. There were two points he would like to mention, the first was, that he did not consider that micro-organisms penetrated to the periosteum in any other way than through the middle of the tooth. He was not aware that this had ever been put into actual proof by the aid of the microscope, but in his opinion micro organisms of putrefaction would be found present in the dentinal tubes, and also in the cemental cells, and in that way would get to the periosteum, otherwise he could not account for those cases where one found the apical foramen much reduced and three or four vascular canals penetrating the side of the root passing upwards to the pulp cavity. There were other evidences of extreme activity in that region, and he was convinced that there must be some irritation produced by the organisms passing directly through the substance of the root, through the periosteum, without going through the apex. Another point was with regard to the question of abcesses, he thought Mr. Baldwin said that he was not quite sure what was the condition of the abcess, whether the cavity dried up, or whether the cells came together, or in what condition it was found ultimately. The point was raised whether micro-organisms or antiseptics could penetrate into the abcess cavity when it existed It was perfectly certain that they must do so ; undoubtedly those teeth were curable after being dried once or twice ; he could only conceive it possible that they were cured by the destruction of the micro-organisms by the action of antiseptics Some might say that being deprived of air the micro-orgamisms became inert, that might be a possible position, but he should say that the antiseptics had penetrated to the abcess cavity, and unless it were proved to the contrary, he thought one was justified in such a position. He had been very much impressed by the remarks of Mr. Baldwin and the other speakers.

Mr R. H. Woodhouse had not had the advantage of hearing the paper read, but from Mr. Baldwin's excellent summary, he gathered that there were one or two points which he did not mention. With regard to two out of the three classes of cases for immediate filling, he could shake hands with those who adopted the method. Where a nerve had been destroyed by arsenic, and carefully removed, there was no reason whatever why the fang should not be at once filled and the opening closed, so as to prevent any further contamination. In the second class (where there was a sinus at the end of a fang), immediate filling might be adopted, every precaution being taken to remove all septic matter and get the antiseptic solution to pass through the sinus so as to thoroughly cleanse it. With regard to the third class of cases to which Mr. Woodruff alluded, though he (Mr. Woodruff) hoped he was a fairly plucky practitioner, and he trusted also a careful one, he had not quite come up to the position of filling such cases without a little preliminary treatment. If there were any discharge down the fang, he was certainly very diffident about closing up the cavity, at all events, for a few days. With regard to disinfectants, there was one which had not been mentioned that evening, namely, iodine linament; he had found it to give better results than other antiseptics in those long cases of carious teeth, where the fangs had been very unhealthy, and had been in that condition for some time ; it entered very readily into combination with any albuminoids that might be present and rendered them inert. He left the fangs full of the linament for two or three days, and they had gone on exceedingly well, as a rule ; if he had used any other disinfectant, he should not have felt the same confidence. After destroying the nerve, he did not usually put in the filling of metal at once ; he found it better to insert a gutta-percha filling for a few weeks.

Mr. J. F. Colyer thought that there were a few points which had not been touched upon. Like Mr. Woodruff he was rather given to immediate root filling, and, with many others, he had at first thought it somewhat risky, but he had come to the conclusion that the adoption of the immediate method was largely a question of pluck. He understood Mr. Baldwin to be of opinion that pericementitis was more frequent after the immediate than after the dressing method, but he (Mr. Colyer) did not think that this was the the case. If he thought he could get better results from the latter method he should go back to it, but, on the contrary, he was inclined to agree with Mr. Woodruff that the best results were obtained from the former plan, which he had practiced for the past four years. He had been watching anxiously for the results of some of the cases treated four years previously, but was unable to recollect a single instance of having had to extract teeth filled by the immediate method. He agreed that the advocates of immediate root filling had taught them to be very much more careful in the treatment of roots, and in the removal of debris from the canal. An important point, for which he was indebted to Mr. Woodruff, was not to remove the debris too quickly, but this, of course, applied equally to the immediate and dressing method. The risk of pushing septic matter through the apex would be better avoided by adopting a slight rotary rather than a pumping motion. With regard to the instrument, he did not favor a reamer; he thought a canal treated without reaming could be filled much better. He, however, used reamers where the dentine had been thoroughly softened, and in such cases they were very useful. The class of cases he found difficult to treat were those with large apices, in such instances he believed rizodontrophy was sometimes useful. On two occasions he had adopted the method of sponge grafting, recommend d by Mr. Brunton, with great success. Mr. Brunton's plan was to pass up through the apex, right into the apial space, a sponge graft, rendered thoroughly aseptic, and leave it there. He would be glad to know if anyone else had had experience of this method; it certainly seemed to provide an additional method of filling these root canals. With regard to drugs, he should be glad to hear if anyone had had the experience of a drug mentioned at the Chicago congress named kalium natrium. The mode of its application was to pass it straight through the pulp of the canal on a Donaldson. It was claimed for this drug that it united immediately with the fatty material in the root and sterilised the canal at once, the heat generated acting to a certain extent as a germicide. From his experiments out of the mouth, Mr. Colyer was sanguine that the drug would prove to be the best for treating small buccal root canals of upper molars, and the anterior roots of lower molars. He had twice tried it on teeth in the mouth, and in both cases with success. Another drug he would like to recommend was sodium peroxide, which he preferred to peroxide of hydrogen. It possessed the advantage that there was a greater amount of oxygen available, and consequently, when it united with the fatty materials in the canal, not only was the oxygen set free, but a soap was formed which very much facilitated the cleansing of the canal. Dr. E. C. Kirk, had written an interesting article in the *Dental Casmos* about this drug, and the more he (Mr. Colyer) used it the better he liked it. With respect to treating canals by the immediate method, when pus was present, it being a cardinal doctrine of the immediate filler that the root must be dry at the apex, he did not think he would recommend such a course. He might mention that three and a half years ago he treated, by the immediate method, the right upper lateral of a medical man, in which for some months cotton wool had been inserted to soak up the discharge coming from a chronic blind abcess. He inserted a large gold filling, and it had remained perfectly sound and tight since. He could only explain his success on the theory that the peroxide destroyed any organisms existing in the cavity. The treatment of buccal roots had always been a difficulty to him, and whenever he could not get a Donaldson up the canal he left them alone. One of the American journals had recently recommended the use of a 50 per cent. solution sulphuric acid, the theory being, that by introducing it into the canal the dentine was softened; the plan was highly spoken of, and he thought was worth a trial. He had great difficulty with root canals having semi-calcified pulps. Many of the members would be aware that Dr. A. W. W. Baker read a paper at the Newcastle meeting on this subject, and gave the results of his experiments with sublimates. He was glad to hear Mr. Redman speak of the necessity of opening up canals thoroughly. It seemed to him (Mr. Colyer) that very little was known of the architecture of a tooth, and he thought that much of the tissue was often cut away unnecessarily. After they had cut away the posterior surface of a second bicuspid it was not an uncommon thing to find, after about six months, that the wall gave way. He thought that a method of opening into a chamber without removing so much of the tooth structure might be found.

Mr. T. G. Read said, with regard to the bristles used, he thought that those usually supplied were too thick and too smooth; a smooth bristle was very awkward indeed to wind a dressing on. Concerning root fillings, in most cases he preferred very thin gutta-percha dissolved in chloroform. In a few cases, where one could not remove all the pulp, he thought oxychloride of zinc seemed to answer the purpose very well. He did not like the idea of putting wool into the canal as mentioned by Mr. Baldwin, for if a piece was left in, the canal could not be thoroughly drilled out and septic fluid might be driven into the apex.

Mr. Storer Bennett said that, in his judgment, the whole question of the successful treatment of roots entirely hinged on their being thoroughly cleansed and rendered aseptic ; whether this was done in a single visit, or in several visits, he thought was immaterial. While willingly admitting that a considerable amount of trouble was taken by the advocates of the immediate method, he thought more was claimed for them, than was perhaps intended, when it was said that they took so much more trouble in cleansing their roots than the exponents of the older method, and obtained thereby a proportionately greater success. He agreed with his brother (Mr. F. J. Bennet) in thinking, that a very large amount of exceedingly good work had been done, and was being done, by those who had never attempted the immediate method. With reference to the use of such drugs as peroxide of sodium and sodium potassium, of which Mr. Colyer had spoken, in view of the fact that they generated gases, and that the necessity for extreme care in not forcing putrid matter through the apex was urged, it would appear that they would be running considerable risk of doing that which it was desirable to avoid in using any drugs which generated oxygen. It might be argued that, even if the putrid matter were forced through the apex, it would be rendered aseptic by the action of the drug, but if that were true it would be safe to fill the canal with that portion of the pulp in it. Mr. Baldwin seemed to lay a little too much stress on the care taken to open up the root canal properly by immediate root fillers, but he was quite sure that a large number of practitioners did open up root canals under the old method so as to gain full access to them, and it would be remembered that Mr. Hearn read a paper some years ago—before the period of immediate root filling—showing how he considered the root canals of various teeth should be treated. There was one little point upon which he would like to be instructed, namely, the pathology of what Mr. Baldwin called the potential cavity, and also the abcess cavity. He did not understand how they could get any eating away, or erosion of bone, at the end of a tooth, which became either filled with granulation tissue, or occupied by an abcess sac containing the fluid. He did not understand how that cavity could exist and could be washed out and dried so thoroughly that no discharge came from it, and that gutta-percha, or any other dry substance, could be put into the root canal and produce a filling up of the bone cavity or a safe condition of that cavity. Once more, he would like to give his testimony to that much abused drug iodoform ; he was quite sure that, clinically, very valuable results had been obtained from it, and he thought that it was only fair that, so long as they obtained such results, they should give the credit of them to the drug, no mrtter what might be shown by bacteriological cultivations.

Mr. Beadnell Gill asked how they were to distinguish the safe cases for immediate root filling from the unsafe ones.

Mr. H. Baldwin, in reply, said that he feared that the short outline of his opening, which he gave at the commencement of his discussion, had produced a rather false impression. He was not himself an immediate root filler of at all a pronounced type, but the position he took up was, that with a certain number of dead teeth it was certainly safe to fill immediately, while it was at all not safe to treat a certain number of others in that way, and one could not always be certain beforehand, of even those cases, that were safe, and, therefore, if there was any doubt about it, it was better to put in a trial filling, then if trouble afterwards arose the filling could be easily removed. Mr. Woodruff had asked if on a second visit a fang was found pretty quite, why should it not have been filled on the first ? His reply was that it was not possible always to say on the first visit that it would be found quiet on the second, nor could they be certain that it was going to remain quiet. Then the question arose as to the possibility of disinfecting a potential cavity. He believed it could be done with peroxide of hydrogen or some volatile antiseptic, at any rate, if it was not rendered quite aseptic it was sufficiently so to enable natural processes to deal with the organisms. Then as to treating a sinus from the outside, he thought that pumping the antiseptic through was the better method if the cavity was fairly small, but there were cases where a cavity could not be washed out in that way and must be considerably enlarged on the outside with an escharotic and a drainage tube put in. With regard to the use of nerve canal drills, he thought it better, unless the canal were very large, to use the fine drill as far as it would go with moderate pressure, taking care not to let it slip through the end ; it should go as far as possible towards the apex, because it made the canal easier to fill and the stopping could be made with greater facility. It was also a very complete way of removing particles from the canal, for sometimes a Morey or Gliddon drill would get out particles that could not be got out in any other way. As regards the shoulder of dentine, if a properly shaped Morrey drill was used, the drill terminates in a probe point, and the cutting wings fine away to nothing towards the point, so that no shoulder would be possible. He could agree with Mr. Woodruff as to the value of chloroform as an antiseptic, especially if mixed with eucalyptus oil. With regard to the frequency of extractions necessary after the immediate method, he thought that the percentage of failures were usually put enormously high, at two or three per cent. he should be inclined to put his own failures, after filling dead teeth where found dead, at about one per mille. He thought the most dangerous teeth of all to fill immediately were lower bicuspids where there was any pus welling up through the root. He did not know why, but perhaps it was because the root was very long and had to drain upwards. Mr. Redman had spoken of the antiseptic oxyphosphate cement as a good root filling, but Mr. Baldwin preferred gutta-percha because it was so easily removed. For the same reason he objected to Sullivan's amalgam, on account of its difficulty of removal if one wanted to crown a tooth. With regard to the permeability of dentine, mentioned in Mr. Grayston's letter, and the possibility of forcing water through it, he believed that water could be forced through any known substance, but that he thought that Mr. Paterson's experiments some years ago proved that dentine was not very permeable.

Then as to whether micro-orgamisms could travel along the dentinal tubules ; this was not the question he raised, but whether the pericementum could get infected in that way, and he did not think it could unless there were pathological changes, which existed only rarely. Mr. F. J. Bennkt thought that he (Mr. Baldwin) had given too much of the credit to immediate root fillers for the increased thoroughness in cleansing root canals so much more prevalent now than prior to the introduction of the method, but he, (Mr. Baldwin) did not go to the length of saying that others under the old method, had never been thorough, but the necessity of thoroughness had been more particularly accentuated by the exponents of the immediate method. Then with regard to rizodontrophy, it sometimes gave good results for a good number of years, but very frequently it did not, and upon the whole he was inclined to regard it as a slovenly method. Mr. Bennett had said that abcesses were usual in chronic dead teeth, but he (Mr. Baldwid) was of opinion that most dead teeth have no abscess, and even no inflammation around them. Mr. Colyer had rather misunderstood him in stating that he had said that pericementitis was more likely to occur after immediate root filling; his position was, not that it more commonly occured but that it was better to put in a trial filling in case it should occur. Mr. Storer Bennett asked a difficult question as to what was the pathology of an abcess cavity in the jaw. Very often he thought there was an actual cavity filled with pus, and then again one had cases where there was no actual cavity. In his opinion the septic matter in the root produced periostitis, followed by ostitis, necessitating the removal of the bone, and one got granulation tissue left. In many cases, where there had been a large abcess cavity, filled with pus, it would, to an extent, heal itself by the growth of a soft tissue. Mr. Gill desired to know which were the safe and which the unsafe cases. In Mr. Baldwin's opinion the latter were decidedly those where pus existed, and it was impossible to get satisfactorily to the apex of the tooth. Most of the other cases were safe, but he thought it was better to put in a trial filling in the first instance.—*Dental Record.*

PYORRHŒA ALVEOLARIS.

Dr. F. T. Van Woert establishes six points :

First. That necrosis of the alveoli never is present in this disease.

Second. The waste of bone is due to an absorption, the same as that which takes place after the extraction of a tooth.

Third. That the disease is confined to the peridental membrane, and the deposits and absorption of bone are a result, and not the cause.

Fourth. That the disease can be conveyed from one mouth to another through imperfect care of instruments, and such other means as our general operative work makes possible.

Fifth. The operation recommended by Dr. Riggs is productive of more harm than good, and should never be performed.

Sixth. There is no treatment now known that will entirely eradicate the difficulty, but I think the one recommended by me will go far toward holding it in check. Of one thing I am certain, if you adopt it you will never do harm—a point in its favor that the old treatment cannot claim.

The first step recommended in his treatment is cleanliness, and "the avoiding of infection ;" second, sterilizing of hands, instruments, napkins and everything else used in or during the operation. "The searing of the orange wood, which is used to convey the trichlor-acetic acid recommended into the pockets and beneath the gum, is to prevent the laceration of the soft tissues by fine splinters that are liable to be formed in shaping the points, and the acid itself is to soften the deposits and cauterize the surface, without leaving a slough."

"The instruments designed to remove the deposits are varied." Recommends those devised by Dr. Allport.

I wish to give you a new method of removing the deposits. Three or four weeks ago I had a case that gave me a great deal of trouble, and after trying for a long time to cleanse from the parts the nodules, I was about to give up in despair, when it occurred to me that a chisel and mallet would be just the thing to start them. I set to work to adjust my Bonwill mallet for the purpose, and the results were so far beyond my expectations that I could hardly believe myself. I put a chisel of very small width in the mallet, and found that without the least danger of injury to the soft tissues I could chip off all the matter calcified upon the roots, and with less pain to the patient than by any other method with which I am acquainted. The same effects can be secured with the electric, or any mechanical mallet other than the automatic.

After treatment, the inflammation may not subside, yet if the parts are kept in an aseptic condition and free from these deposits, I doubt if you will find any absorption, or if the patient will loose the teeth. The principal difficulty arises from the lack of persistence on the part of the patient. He is so apt to think that all this attention is unnecessary, and will not come when told or sent for, but leave it until he feels a return of the uneasiness. The result of this will be very rapid progress of the disease and the ultimate loss of the teeth, while the dentist will get the blame.

DR. C. N. PEIRCE defines the pathological condition thus condensed:

First. The inflammatory stage of true pyorrhœa alveolaris primarily begins in tissues on the side of the root near the apical extremity, and secondarily advances towards the gingival borders.

Second. The cause of this inflammation, or pericementitis, is the plasma exudation from the blood-vessels, freighted with salts, which in their deposition and crystallization upon the cementum of the root exert the influence of foreign bodies, and so act as irritants.

Third. The salts in question as disclosed by chemical analysis are calcium and sodium urates, free uric acid and traces of calcium phosphates.

Fourth. The chemical nature of these salts indicates a condition of the blood in which there is an excess of uratic salts and uric acid, due either to increased formation or imperfect elimination. The excess of these salts general pathologists regard as indicative of a faulty nutrition, and the immediate cause of a series of local disturbances to which the term gouty has been applied, the nutritional disturbance being known as the uric acid diathesis.

Fifth. Results from constitutional, in connection with the usual local treatment, in a number of well-authenticated cases of pyorrhœa, have been so marked and satisfactory that the writer feels fully justified in the assumptions regarding the origin of the disease.—Abstract from *Pacific Coast Dentist.*

COLLECT !—PAY !

In the system of rendering accounts the dentist is somewhat governed by the custom in vogue in his locality, but the general rule should be to render an account very soon after it is contracted. Unless so stipulated in the arrangements, a bill should be rendered not later than the first of the month following the completion of the work. Patients should be made to realize that the dentist conducts his practice on business principles. No reasonable patron will take offense at the prompt rendering of a bill when it is known that this is the rule of the dentist. There are many arguments to favor the observence of this rule. An account that has been standing a long time is usually paid with more or less reluctance. This is not only true in a general business way, but it is particularly true of dental accounts. The value of the service rendered sometimes grows very vague to the patient as time advances. At the moment he leaves the dental chair, after the insertion of a difficult filling, he is in a measure able to realize something of the energy and skill required on the part of the operator, and is usually willing to renumerate him accordingly. When he has had several of these sittings in the course of a few weeks, and is somewhat wearied of the dental chair himself, he is not likely to demur at a reasonable bill if presented while he is in this mood. But if the dentist neglects to send the bill for several months, the patient is apt to forget the amount of time and energy expended by the dentist, and to consider the bill excessive.

There are many things that might profitably be said on this subject, but the limits of an editorial prevent anything more than the mere reference to one or two points. We offer this as a business motto to the young practitioner : Collect your bills, and pay your debts.—Editorial, *Dental Review.*

IMPLANTATIONS AFTER SIX YEARS.

Dr. William Jarvie: There are some features of special cases of implantation that are decidedly peculiar, and as I was a witness of one of them I think it may be interesting to state the case. It was that of a lateral incisor, and the operation was performed by Dr. Younger in my office. The subject was a young man of twenty-three, who was associated with me in practice. We had great difficulty in getting a tooth that would match his teeth, either in shape, size or color. Three days were consumed in visiting dental offices in search of a suitable tooth, and when the time for operation arrived it had not been secured. But Dr. Younger used the best at hand, and the vilest colored tooth I ever saw had a place among good-looking teeth. It was a greenish color, the other teeth being of a bluish white. The operation was performed on Thursday about four o'clock. On Saturday, about ten o'clock, he came in and said, " I don't believe this tooth will stay in my mouth another half hour." The gum had begun to swell, had a purplish appearance, and the tooth had dropped down perhaps two lines, and was so loose that he kept it in place with the utmost difficulty. As it was a test case, I wanted to experiment with it, and give the operation every opportunity of succeeding. I put the tooth in position, took an impression of the mouth, and in about three hours had a rubber plate so made that it would hold the tooth immovably in place. That plate was not taken out of the mouth for forty-eight hours, and after that only from time to time to clean it. For a few days there was hardly any improvement ; after ten days there was a very great deal. The tooth actually took on the color of the other teeth. Now that, I think, is a marvelous thing. The tooth to-day is very nearly the same color of the other teeth, and is firmly held in the young man's head.—*N. Y. Trans.*, 1887.

I have a model in my hand of a case of implantation, which was performed a year ago by Dr. Younger. I spoke of a case that had been performed by him some six months previous, which a few days after the operation was as near a failure as could be ; yet by care and keeping the tooth fixed in position, it, up to that time, indicated success. I took an impression of the mouth on Monday, and present the model simply to show its present condition, and the perfect formation of the gums around the neck of the tooth. They are just as perfect as any you ever saw. This model was made some eighteen months after the tooth had been inserted. In taking the impression the material drew a little over to the right, and it would appear as though there was a fistulous opening over the root ; the process is very thin over that portion, and particularly over the implanted tooth.—*N. Y. Trans.*, 1888.

In reply to our request for information as to the present status of the tooth in question, Dr. Jarvie writes us under date of June 21, 1894, as follows :

"All the teeth referred to, three of them, have been lost. Each of them remained in the mouth and quite firm, for between five and six years after the implantation Suddenly the crowns loosened and came out, showing that the roots had been absorbed almost entirely, and as the gums over the roots remained full until a very short time before the crown came away, I concluded that after absorbtion commenced it proceeded very rapidly."

TO CHICAGO'S '94.

Gentlemen, you should ever bear in mind the fact that you are to be separated from trade, and from all its methods. You are climbing into positions that are hallowed by the traditions of the centuries. You are the successors of men who in all lands and at all times have been held in special honor You will possess the privileges that are not extended to those who are engaged in the ordinary avocations of life. Medicine has adopted your specialty, when worthily practiced, as a part of herself. Theology looks upon you with respect, as of the same general guild. Law has extended to you immunities, and secured for you reverence in your professional relations. The world takes you into its confidence, and places in your hands important interests. Men send to you their wives and their children, for professional advice and assistance. You have no right to take upon yourselves these momentous duties without the proper qualifications. You are bound in all honor to keep abreast the advance of professional knowledge, that you may be prepared always to render the best service possible. Above all things, you will be despicable beyond conception should you take advantage of professional relations and confidential associations to compass any shameful or selfish ends. Your patients must of necessity trust you implicitly, for they visit you because you possess knowledge of which they are destitute. You are unworthy a place in the ranks of a profession if you betray that confidence by failing to give in every case your very best services. In all your professional relations, I charge you to be true to yourselves, your profession, and your Alma Mater, who will ever watch your future course with anxiety and solicitude. —BARRETT, (W. C.), *Dental Review*.

AMERICAN DENTISTRY IN LONDON.

American dentistry in England is advertised most extensively and traded upon by most who practice, or pretend to practice it, simply because of the general admission in England of the superiority of it as compared with that practiced by other nationalities. The easy credulity of the English public in this matter leads them to be duped by what is called American, although those who practice under this title are not of that nationality or schooling. The consequence is, that the grossest maltreatment, to speak plainly, is perpetrated, both in supposed-to-be swell private practice as well as in the advertising "limited" companies, who carry on a trade in dentistry rather than a respectable practice. It is well known by the English dentists that this is a great wrong, not only to them, but to the people who are the victims of this avariciousness ; they unscrupulously charge the exhorbitant fee because it is "American dentistry," while the truth of the matter is, dentists of ability in the States are not guilty of performing operations such as are classed here as American. As a result, the standard of American dentistry in London is anything but what we could wish, and, as seen by most English dentists, is far from being a credit to those who should be representatives of the profession, capable of upholding its high reputation and standard abroad. Why is this ? naturally may be asked The answer is not very hard to find, when it is known that there are several companies in London, with branches throughout England, who claim to be, and advertise as, Americans, and it is certain that many whom they employ are young men from the States. Every dentist who carries on a respectable practice will most emphatically condemn their methods. Some of the work done is not worthy of any American ; yet fee enough is charged to command the best obtainable service from the hands of our experts. Their charges are excessive for what is really bad.

With this state of affairs going on for years, it is not surprising that our standard should be looked upon as no improvement upon that of the English. In private practices, there are many at present who for years worked for these firms, and finally established themselves when their time expired for which they were "bound out," for no one can secure a position who will not sign a contract that binds out of London so many miles and for so many years. Some of these men go on with the same kind of work, and coin money. Even in the aristocratic West End (which one might think would be free from such) they are to be found. Some who never attended college put "Dr." on their door-plate, and "Doctor of Dental Surgery" appears, in so many words, on advertising cards, in defiance of the law restricting them from practicing in Great Britain. There are men who charge five hundred dollars (and it has been paid) for a full denture, gold base and rubber attachment, while if a tooth be a trifle off color, it is cut off and a crown put on at large expense. Many of these charlatans place large fillings over putrescent pulps, while the best is being paid for and supposed to be received. There are many working in this way, against whom the more learned and skillful have to compete, the latter in modest and professional manner, while the former class are obtrusive and gain the patronage of the wealthy and nobility, for the reason that, being Americans, better services are supposed necessarily to follow. What wonder the standard is not being elevated! But some there are who are faithful and conscientious, and the English dentist is fair enough to acknowledge a good production from the land of the Stars and Stripes.

Graduates of American schools have practically no opportunity of securing good situations in England at the present time. A law has recently be passed by the General Medical Council forbidding dentists, under penalty of having their names removed from the register, to employ unregistered assistants. The only opening for the graduate is to take the examination for the degree of "L. D. S." (Ireland), "sine curriculo," in Dublin. Three Harvard men have passed successfully, and are now registered. Let those who go to practise in London adhere to the principles they have been taught before leaving this country, and there will be a change for the better.

Let all diplomas be disqualified (as the British diplomas are) when graduates are involved with firms of the aforesaid description, and the day will not be far distant when a different state of affairs will be presented, and firms which bring discredit upon the fair name of American dentristry will have little excuse for their existence.—WILKINSON, (FRANK M.), *International.*

THE DECADENCE OF THE GENERAL PRACTITIONER.

In his scholarly address entitled "Non Nocere," before the International Medical Congress Professor Jacobi (*Med. Record*) discussed the causes which have contributed to the decadence of the general practitioner, especially in the large cities, and sounds a note of warning against the mercenary tendency of the times. While he considers the evolution of specialties, both in science and practice, as spontaneous and legitimate, he justly points out how greatly the dignity of the profession has been lowered by those young men who expect to make a great reputation and an easy living out of very little mental capital and out of a little manual dexterity, to the neglect of general medicine. A young medical man, says the author, who runs off into a specialty, honestly believing that a human organ can be studied and treated separately, like the wheel of a watch, has not intellect enough to be a pysician, and ought to have been discoaraged from entering the ranks. It would be well if this axiom was more deeply impressed upon the minds of those youthful members of our profession who consider a three or four year's course at a medical college, supplemented by a year's service at a hospital or a trip to Europe, as a passport of admission to the rank of specialists. But, as Professor Jacobi pertinently remarks, many a young man sins because he knows no better, and was not told. If the teachers of medicine, if the great professors of specialties in the schools of learning, neglect the duty of teaching from their platforms the morals as well as the science and art of medicine, it is they from whom comes the harm. The author further points out, and his remarks on this topic are eminently just, that medical practitioners, by favoring, as they in their modesty are apt to do, in every possible case, the specialist, and the very existence of the specialists in large numbers and beyond need, have tempted the public into thinking less of medicine and medical men, and more of mere handicraft. That is why the physician has gradually lost his dignified position in large communities. It is in the country, where he still is, in his own person, the sole representive both of his science and his calling, that he is still esteemed at his full value.—EDITORAL, *International Journal of Surgery.*

WHOLESOME SURGERY *VS.* MORBID CONSCIENCE.

About a year since, the *American Ecclesiastical Review* opened its pages to the discussion of "A New Moral and Physiological Problem," with a view to the solution of certain moral problems which are supposed to arise n the management of ectopic gestation ; the theologians addressed six questions to thirty-seven practical gynecologists, asking their views of the proper conduct of this dangerous condition. Their action in thus appealing to scientific investigation for light and assistance is commendable. The spirit manifested by them in so doing is indicative of the progress of the human mind towards enlightenment during the last two centuries. Far different was it in the days of Galileo !

The problem here discussed involves the solution of a *casus conscientiæ*, which I put before you in the words of one of the physicians participating in the discussion. "The Catholic physician will be very much puzzled to act in a case which he knows to be extra-uterine pregnancy (before rupture). Woman and child will probably die at the time of rupture. If he remove the tube he will kill the child. What should be done in this dilemma, I leave the moralist to decide."

The same *casus conscientiæ* is involved in question VI., which reads thus:

"When the child is alive, having reached, or nearly reached its full term (in intra-ligamentous or abdomidal pregnancies), can it be saved? Should the physician wait until it is dead in order to avoid certain complications? In other words, can the surgeon *habere se passive*, when he is seriously afraid of killing the mother by interfering"—(Editor). Is it not his duty to save the child, in order that it may receive the rites of baptism, though it be at the risk of the mother's life?

I quote this question only, because the replies to it indicate the views of the writers concerning the management of ectopic gestation during the second half of pregnancy. The replies vary very much in their character. This is to be expected, because the treat- of extra-uterine pregnancy presents still, unsolved problems.

It is not my purpose to discuss at length the moral problem. The physician must recognize a moral principle in dealing with a subject which in many instances involves the life of a child. For me, as a pyhsician, the moral question is easy of solution. My obligation is to the mother. She has called me to give her the best chances of escape from the perils of child-birth. These she shall have, without regard to any other interests, and the light of science shall be my guide.—MAURY (RICHARD B.), *International Journal of Surgery.*

THE
ODONTOGRAPHIC JOURNAL.

CONDUCTOR'S DEPARTMENT.

OUR CONTENTS.

Dr. Patrick's instrument for measuring the crushing power of the jaws should have been illustrated A cut would tell the story of its make with little or no description. The etymology of the front half of the term "Notho-dynomometer," would prove of at least passing interest, likewise the reason of its application.

As to whether a man shall extract for his own patients or refer them to someone else is a many sided question. It is a disagreeable operation for both parties ; to do it skillfully calls for constant practice ; it comes at inopportune times ; if done without an anesthetic the vocal outbreak disturbs, perhaps unnerves, the patient in waiting; if done with ether this agent saturates the operator, also the office outfit, often to the disgust even to nauseating of the hyper-sensitive; it consumes time ; it breaks into other and more important operations, and so on without end. It should be done by a specialist, who is also informed and skilled in the use of general and local anesthetics ; it should be done after advice and by direction of the patient's own dentist, who should use diagrams on which to check off the offending teeth. In small places this is out of the question ; but in good sized cities there is no longer the shadow of excuse for the general practitioner to continue the extraction of teeth. It ought to be patent to all that this field must be occupied soon, and by men who will devote their whole time and talent to the administration of anesthetics and the legitimate extraction of teeth, often if not always after the condemnation of such teeth by the general practitioner.

In condemning wholesale extraction by band masters and nostrum injectors, several of the gentlemen overlooked what ought to be the unquestioned right of every fool, to enjoy to the full the consequences of his own folly.

When the current discussion of pyorrhea shall have reached a stopping place, the skilled compiler should take hold of the matter and give us an abstract of the moiety of it that is settled. Which leads us to remark that the making of an abstract is a fine art. The *Pacific* took a hand at it with more or less of success.

The "immediate" method is under discussion by our transatlantic friends, with about the American proportion of pros and cons, ifs ands and buts. At home it seems to have come to sometimes filling immediately, more times remotely. The report makes one of the speakers prescribe for tenderness following filling, "Jamaca dogrel." He preferred it to aconite or iodine.

The doctorate address is a feature of Chicago's commencement.

Collect your bills; pay all you owe, and promptly.

Dr. Jarvis's case of implantation suggests the color changes that sometimes occur in skin from grafts from strange places. The tooth in question actually took on the color of the other teeth. The personal equation is potent even to the coloring of teeth.

Until of late American dentists had a name abroad that commanded unqualified respect; but now things are different and to that degree that in large cities like London the shop and slop American dentist has well-nigh reduced his calling to the level of dental trade stands at home, the proprietors of which delight to call themselves companies, associations and colleges. Perhaps a little protection such as provided for in the recent registration act was not wholly uncalled for. Americans who desire to practice in Great Britain now go first to Dublin, where they take the examination for the L. D. S., and if successful acquire the right to registration.

That there should be any question in the minds of gynecologists as to which should be sacrificed in a critical case of extra-uterine pregnancy, mother or child, will strike some of our readers as a bit odd. It has given rise to much discussion in the past and is still a difficult thing to dispose of by the man who is weighed down by his sense of duty as medical attendant and the teachings early instilled by his church.

According to Dr. Jacobi the general practitioner is dead in large cities, the specialist (save the mark in the majority of him) having supplanted him in the confidence and esteem of the public. A few years more and the all-round man will be found only in the region of wayback. As suggested by Dr. Jacobi the specialist is coming to be measured in terms of a dollar.

Incidentally Dr. Richards characterizes filling with amalgam as "a disgusting and slovenly operation." This is denunciation wholesale. Amalgam is the very best thing in its place; its place is in a given class of teeth or class of cavities in such teeth; and if there is anything slovenly or disgusting in the operation it does not apply to the properly prepared and used material. The chances are that every operator in decent practice sees and makes more good fillings of gold than amalgam, and it would not seem unreasonable that his percentage of good amalgam fillings should rise were he to give his amalgam operations the time and attention they deserve.

Technics is coming to the front for discussion. The *Review* is illustrating the subject elaborately.

In some quarters the notion prevails that dentistry needs a more expressive degree,—something more in keeping with the work performed. But patients have only recently got beyond asking the meaning of D. D. S., and is it not early to ask them to memorize a new combination? Professions never get beyond a degree of some kind, but individuals are growing in number to whom this kind of lumber is a bore, and who would have none of it twenty-four hours after commencement if they could have their own way without being dubbed peculiar. A further multiplication of degrees would prove unfortunate: First, because the D. D. S. is not only a good degree, but a good enough degree; second, there would in the end be but one to be added to the list, that coupled with his LL. D. by the gentleman who was "born and brought up in Milk alley;" and third, the kinds of doctor now abroad are that common that the future may see him rival the day laborer not only in number, but also in the value of his output. Let us stick to the D. D. S.

The brief extract on self-intoxication by means of by-products of microorganisms of the alimentary canal, brings to mind a trial for murder by poisoning with strychnine, with the chances all against the accused, until an expert testified to the production of strychnine symptoms as effects of intestinal alkaloids alone.

The editorial on dental scientific work should be read by every member of the profession, whether he drills with the scientific or the practical. "What we need, then, in dentistry is not more of the so-called practical, by which is meant the strictly empirical, but more of the essentially scientific, which is the only true practical; less of mysticism and rule of thumb, and more of the rational and the exact." This we need in every quarter, and more of it is sure to come. The bluster of the self-asserting practical man, whose practicality is usually of the alleged type, seems to have seen its best day; but it should not be lost sight of by the scientific man that argument without fact must necessarily fall short of filling this long-felt scientific want, which must have its foundation in work, and every dead-in earnest man should always sweat before he eats.

Don't waste your employer's materials; don't waste his time. Don't waste even your own.

At least one of those whom we quote in this issue, is done with vulcanite. For him Aluminum forever.

The short extract on fitting Logan crowns, reminds us that the pins are not as stiff as they should be. We have fitted many incisors and crowns with the greatest of care and in a few instances had the tooth thrown forward to that extent that a little gap between crown and root appeared on the lingual side,—the pin had been stretched and bent and yet the tooth remained firm. Additional stoutness would help the matter, but change in that direction carries with it obvious disadvantages. The true remedy is to be found in the use of platinum alloy, but this again involves considerations of fusibility in the process of tooth manufacture.

Green and other stains are uppermost just at present and the careful study of the subject promises to lead to studies in micro-chemistry. It is difficult to conceive of green or other stains as other than mere accompaniments to processes that are destructive.

Extraction by slow methods has been effected by working arsenic into the peridental membrane, also in single-rooted teeth by slipping over the crown a tight-fitting rubber band; but it remained for Dr. VanWoert to perform the operation by inducing a disease with septic matter from another patient. That it can be done seems to have been demonstrated; that it has been done ignorantly and unintentionally time and again is far from improbable. One case is as good as a dozen, so there is no good reason for wishing the speaker the desired "two or three more such cases" that he may do it again."

According to Dr. Barrett, if you would know your brother dentist get into his den,—his laboratory or study, or bath.

Dr. Belchers presentation of the methods of our "forefathers" wrenches history here and there, but not enough to seriously cripple the general reader. Some fellow in the back part of the meeting room suggested in an undertone that the essayist favor the Seventh society with a little discussion of the methods of our "hindfathers". He'll do it, never fear.

Types of physician are very numerous, and types of dentists are no less so. With a few changes in detail Dr. Monroe's types could easily be made to fit elsewhere.

Pits, otherwise cellars, are deemed essential in house-building, but why not keep them well out of the earth. Why dig a hole in the ground for the sake of draining it? Your neighbor's water-table is just three feet from the ground level, but is that a good reason for not making yours five? Why should you be held down to three feet? Why not compel him to rise to five? Why?

Boiled milk is not Pasteurized milk, and should never be given except for purposes of constipation. The rule is: Fifteen minutes at 160°, cooling quickly. This latter precaution is too often lost sight of.

The *Microscope* editor writes in just a bit of a temper. Notwithstanding all that can be said of vivisection, the exhibition and cultivation of brutality by men who like to "show off" is coextension with the lecture season, and in the hands of such men about as profitable as the study cerebral tissue in a decomposed cat. A type of this kind of "Professor" and the class of "students" that flock with him is well depicted in a resent issue of *Life.* The gentleman and paper criticised by the *Microscope* erred of course in the reflection on Prof. Wilder. Work in anatomy and physiclogy at Cornell is of too serious a character to justify it, and Wilder is a man who cuts for a purpose,—never for fun.

The wood-screw post for setting certain kinds of crown and anchoring large fillings should be better known. Some years ago Dr. Chas. F. Ives distributed among his friends wood-screw posts two or more inches in length from which the operator could cut sections to fit the case in hand. It proved useful indeed, and should not have been let die out. We now see it revived abroad and apparently as a new thing. Dr. J. Morgan Howe originated it.

Formalin is a comparatively new thing in the arts, but is bound to become known to those who would preserve tissues in as nearly as possible their natural state. A few days since we were shown a series of human brains that had been long and beautifully preserved in this medium, and also were informed that the whale now under going dissection in Philadelphia bathes between times in a tank filled with formalin solution. It has uses in dentistry,—preserves tissues designed for micro-study, sterilizes instruments, disinfects roots, and obtunds in some degree dentine.

SOCIETIES.

At its annual meeting held June 12th, the Rochester Dental Society elected Drs. I. C. Edington, president; LeRoy Requa, vice-president; F. C. Woodworth, secretary and treasurer; J. Requa, librarian. The gentlemen named were instructed to prepare a schedule of subjects for discussion and make the necessary assignments for the year beginning October 9th. The subject presented at this meeting, and illustrated by material kindly supplied in part by Ward's Natural Science Establishment, was "The mixing of types the primary cause of irregular arrangement of the teeth."

The New Jersey State Dental Society will hold its twenty-fourth annual meeting at Asbury Park, July 18th, 19th and 20th. The program comprises an address, at least fourteen papers, ten clinics and nearly a score of exhibits. Like everything else originating in New Jersey, the success of this undertaking is assured before hand.

The American Miscroscopical Society will meet in Brooklyn, August 13th, 14th and 15th. Dr. Lester Curtis, Chicago, is president; Dr. W. H. Seaman, Washington, secretary.

The American Association for the Advancement of Science will meet in Brooklyn, August 15th to 24th.

The annual meeting of the American Dental Association will be held at Old Point Comfort Va., August 7th to 10th. Arrangements may yet be effected with railroad companies for round trip tickets at one-and-a-third fare. To keep informed, send your name and address to Dr. Crouse, 2231 Prairie Ave., Chicago.

The Southern Dental Association will meet at Old Point Comfort, August 2d, and continue its sessions till the 6th.

We have not received notice to that effect, but believe that the Association of Dental Faculties, also of Dental Examiners, meet at Old Point Comfort, August 6th.

The provisional program of the VIIIth International Congress of Hygiene and Demography is out, and a formidable one it is. The Congress will meet at Budapest, September 1st to 9th.

At its thirtieth annual meeting the Illinois State Dental Society at Springfield, May 8th to 11th, elected the following officers: J. W. Cormany, Mt. Carroll, president; B. F. Duncan, Joliet, vice-president; Louis Ottofy, Chicago, secretary; W. A. Stevens, Chicago, treasurer; Grafton Munroe, Springfield, librarian. Next meeting at Galesburg, May 14th to 17th, 1895.

At the annual meeting of the Chicago Dental Society, the following officers were elected: J. H. Wolley, president; C. E. Bentley, 1st vice-president; D. M. Gallie, 2d vice-president; A. H. Peck, recording secretary; H. A. Costner, corresponding secretary; E. D. Swain, treasurer; J. J. Whaley, librarian; J. N. Crouse, director.

COLLEGES.

College announcements for 1894-'95 are out, and the prospective student is deep in their study. The student who contemplates changing his school is even more puzzled as to where he shall take his final year, and this suggests the question: Is it wise in a student to begin his course of study in one college, continue it in another, and finish in a third? While the courses of study as pursued in the several colleges are similar, the manner and times of teaching a given subject are as varied as colleges are numerous.

Chicago college commencement was held April 30th. Dr. Barrett delivered the doctorate address. Number of matriculates, 360; graduates 58.

The second annual commencement exercises of the Dental Department of the University of Buffalo, were held in connection with those of the Medical and Pharmacal Departments, in Music Hall, Buffalo, May 1st, '94.

The examinations before the Board of Curators (comprising the State Dental Examining Board) took place during the day, and at their close the following were recommended to the Chancellor for the Degree of Doctor of Dental Surgery, which was accordingly conferred upon them. Arthur G. Bullock, Joseph L. Povall, Joseph W. Beach, Seymour E. MacDougall, Frank L. Sibley, William H. Snider.

The session opened September 25th, '93, and closed May 1st, '94, after a full term of seven months. The number of matriculants was eighty-six. The next term will open September 24th, '94.

THE SEMI-CENTENNIAL OF THE DISCOVERY OF ANÆSTHESIA.

The following is advanced proof of editoral for July number of the *Dental Practitioner and Advertiser.*

> The year 1844 gave to surgery one of the greatest boons ever conferred upon suffering humanity. The discovery of anæsthesia marked a distinct era, and the credit of it, by universal consent, belongs to dentistry. As in the case of all other great discoveries, a number have claimed to originate it, but the consensus of opinion has awarded to the dentist, Horace Wells, of Hartford, Conn., the honor of first demonstrating it, and his name is enrolled among those highest in the temple of fame as being one of the greatest benefactors of any age. This is the semi-centennial year of its discovery, and dentistry should not miss the opportunity of reminding the world of the debt which it owes to a member of the young profession. Dentists themselves also use anæsthetic agents largely in their practice, and they would be recreant to duty and prove themselves but ingrates if they did not in some way mark the occasion by a fitting observance of the anniversary.
>
> The Odontological Society of Pennsylvania took action early in the year, by appointing a committee to take the matter into consideration. The Dental Society of the State of New York, at its annual meeting early in May, appointed a committee to take action upon the part of the dentists of the State. The Connecticut State Dental Society, at its annual meeting, passed resolutions which will be found on another page of this number, and appointed a committee to arrange a semi-centennial celebration, and other societies will doubtless take similar action.
>
> But the subject is too great and too comprehensive in interest to be monopolized by any single body of men. Every dentist throughout the world is concerned in the matter, and should have an opportunity in some way to assist in celebrating an event that must be to him a matter of personal pride. But the time is limited, and whatever

is to be done must be done quickly. Half the year has flown without any general organization having been effected, and unless immediate action be taken the most momentous event in our professional history will not receive the attention which its importance demands.

In this emergency we take the liberty to suggest that every dental society in the land, as far as possible, appoint delegates to meet at Old Point Comfort at the time of the annual sessions of the American and the Southern Dental Associations, there to agree upon some concerted plan of action. It is no time for any elements of personality to enter into the consideration of the matter, or for any claims of priority in conception to be urged. Let us as one man unite in honoring ourselves and our profession, by doing honor to the memory of the man who did so much to honor us. We sincerely hope that there will be a unanimity of feeling among us, and that every dental society, especially every State organization, will through its proper officers appoint a commitee to meet at Old Point Comfort, Virginia, in August next. We commend the subject to our brother editors of dental journals.

The committee appointed by the Dental Society of the State of New York will be glad to receive communications from other like committees.

COMMITTEE.—W. C. Barrett, Buffalo, chairman; W. W. Walker, New York; F. E. Van Woert, Brooklyn; E. C. Baxter, Albany; J. Edw. Line, Rochester.

DIED.

Dr. William H. Eames died in St. Louis, Mo., Thursday, March 29th, 1894, in his 66th year.

The funeral services were held at Trinity Episcopal Church, the 31st, Mr. Ritchie and Father Bardens officiating.

Suitable action was promptly taken by the profession of St. Louis, Chicago and other cities, in all of which Dr. Eames was well known and highly esteemed.

Dr. Charles Barnes, of Syracuse, N. Y., died at Middleton, June 3d, 1894, aged 57 years, and was buried at the former place, June 5th. Dr. Barnes was prominent in dentistry in this State, and for a number of years held the office of secretary of the State society. He was also closely identified with the fifth district and took great interest in its welfare.

CORRESPONDENCE.

In our last issue we reproduced from the *Dental Practitioner* an article on secret preparations, and somewhat detached in the make up of the pages, a formula that has given rise to much misapprehension. A member of the profession in Kansas writes as follows :

"On page 54 of the ODONTOGRAPHIC JOURNAL, April number, you give a formula for a local anæsthetic that we wish to inquire about. First, in regard to the Cocaine Mur. 50 grs. to Aqua destillatæ, 1 dr.: also the amount of Atropiæ, $\frac{1}{10}$ gr. Can these amounts be used? It seems to us not ; in fact, it seems to us impossible to make a solution safe in these proportions. Please let us hear from you in regard to this."

From South Dakota we get the following :

> "I am in receipt of a copy of your Journal for April, '94. Allow me to call your attention to a manifest error in formula on page 54. Some one might be foolish enough to make a cocaine preparation of that strength and get into trouble. I nearly lost a physician's wife a few days ago with a similar formula, though of 10% strength. But very little was used in her case and dangerous symptoms supervened at once. Her husband was present and I believe does not blame me, but we were an anxious pair for 20 minutes. Hard work saved her and only that."

These and other communications to the same effect were replied to, and the fears of our correspondents possibly allayed. For a full discussion of the subject, in connection with the unfortunate case at Goshen, Ia., the reader is referred to the current issue of the *Dental Practitioner*. The editor of that periodical has used the solution in question full strength for six months and without untoward effects. He suggests, however, that for what is practically indiscriminate use by dentists generally it might be reduced by adding to the solution an ounce of distilled water. Our own suggestion is that it be kept its present strength as stock and reduced, if that is the judgment of the operator, just before being put to use.

Not long since a vicinity news correspondent of a Rochester paper reported a case of "bled-to-death from tooth extraction," and thus set the figety patient by the ears. Hoping for an item we wrote an esteemed member of the VIIth Society, resident in the village near which the case had been located, and got for answer the following :

> "In regard to the so-called "bled-to-death" case, I have made inquiry of the attending physician and he gives me the following facts · The case was a pure and simple case of "Purpura Hemorrhagica," and had no particular dental relation other than that he bled from the mucus membrane of the mouth. He also bled from the nose and likewise from the bowels, but his final hemorrhage was in the brain. His physician tells me it was a constitutional case ; that he had been called to see another patient and incidentally expressed the thought that the young man did not look well. He examined him and diagnosed the case at that time, putting him under treatment ; but had little hopes from the first. This is all. It has no dental significance."

All of which goes to spoil another story.

LITERARY AND JOURNALISTIC.

In the May issue of the *Dental Record*, Dr. Cunningham winds up his "Professional Holiday" in America. According to his own telling, to say nothing of the good stories told of him by others, he had an "awful" time.

Of constructive imagination, as displayed in this sphere, men at large appear to be almost devoid ; as witness the absurd systems of teaching which in past times, and in large measure at present, have stupefied and still stupefy children, by presenting abstract ideas before they have any concrete ideas from which they can be drawn.

Whether as lecturer or writer, Prof. Tyndall carefully avoided this vicious practice.—*Spencer.*

Springing a subject, or a special discussion of it, on an intelligent body may be great fun for the speaker, but very little of value comes of it to others. They are taken unawares and not given time to properly prepare for either the emphasizing of the speaker's conclusions in case they agree with him, or criticism and condemnation of them if they fall short of approval. The following from a recent letter is to the point : " I didn't know when I started out on this sheet how I was to pave the way to a comment or two on things which impressed me very strongly when I read them in the *Cosmos* and ODONTOGRAPHIC JOURNAL you sent me. I'm certainly not in touch with the achievements in dentistry within the last few years. When I was accustomed to attend dental gatherings for the investigation of special subjects in western New York, no one came prepared beforehand to discuss or criticize any paper read on its merits ; contrary, there was a habit of universal acquiescence or assentation to whatever was read as disgusting as enfeebling, or if some statement provoked inquiry and criticism, somehow it was apt to be received by the assembly as ill-mannered to the essayist. * * * What's the use of discussion if it doesn't expose all sides of a subject."

In the light of recent events the following is of more than popular interest : A nation of which the legislators vote as they are bid, and of which the workers surrender their rights of selling their labor as they please, has neither the ideas nor the sentiments needed for the maintenance of liberty. Lacking them, we are on the way back to the rule of the strong hand in the shape of the bureaucratic despotism of a socialistic organization, and then of the military despotism which must follow it ; if, indeed, some social crash does not bring this last upon us more quickly.—*Spencer.*

The Busy Dentist is a new and very readable exchange. Its home is Atlanta, Ga., and its editor, Dr. T. P. Hinman.

Revista Estomatologica is the name of a Spanish journal published at Madrid. Dental education, elevation of the profession in Spanish speaking countries, etc., are among its objects. The second number, the only one that has come our way, contains a number of full-page plates illustrating forms of bacteria.

Skandenaviska Tandläkareföreningens Tidskrift, conducted by Dr. Matti Áyräpää, and published at Helsingfors, Finland, is a new comer from a distant land. It is already on our exchange list. Our translator is "a lookin' of it."

Hood & Reynolds have issued an illustrated "Treatise on Gold Foil." It tells all about the process of refining and manufacturing. Send for a copy.

New York State Medical Reporter is a new monthly journal of medicine and surgery, edited by H. Bronson Gee, M. D. It is very handsomely gotten up, contains matter varied, valuable and interesting, and gives evidence of exceptionally careful work on the part of the editor. It adds another to the long list of publications having headquarters at Rochester.

From the first Tyndall suffered from sleeplessness, with the nervous irritability which is frequently the cause and consequence of that distressing malady. It is not uncommon for this state of the nervous system to find vent in fits of ill temper; but, looking back all over the long years of our close intercourse, I cannot call to mind any serious manifestions of that sort in my friend. Tyndall 'consumed his own smoke' better than most people, and though that faculty is worthy of the highest admiration, I suspect that the exercise of it tells a good deal upon the furnace.—*Spencer.*

The question of the reticular structure of protoplasm has been before the world for some years, and the dental profession has taken no little part in its serious discussion. Descriptions of this reticular structure have appeared at more or less irregular intervals, accompanied usually by diagrams, drawings from life (or death), or photomicrograhs, and yet the number of those who disbelieve in or remain indifferent to its existence has not materially decreased. By those who ranked with the indifferent, or counted themselves with the doubters, or actively combatted this teaching, the reticular structure was generally looked upon as a post-mortem phenomenon, and due to the coagulation or precipitation of the albuminous contents of the cell. Authority for this view is still quotable, but there now seems to be little fighting ground remaining to those whose opposition has served the purpose of stimulating its advocates to conclusive experimentation as to the existence of the structure in question. Bütschili's "Protoplasm and Microscopic Foams" has been in the hands of German readers for some time; but it is only within a few weeks that English readers have had the use of Minchin's able translation.

Biology naturally falls into three divisions, and these are even more sharply distinguished by their methods than by their subjects, namely: Physiology, of which the methods are entirely experimental; morphology, the science which deals with the forms and structure of plants and animals, and of which it may be said that the body is anatomy, the soul development; and, finally, œcology, which uses all the knowledge it can obtain from the other two, but chiefly rests on the exploration of the endless varied phenomena of animal and plant life as they manifest themselves under natural conditions. —SANDERSON.

In '68 Dr. W. J. Youmans, now editor of the *Popular Science Monthly*, was preparing an American edition of Huxley's *Lessons in Physiology* plus chapters on *Hygiene*, and forwarding his work as rapidly as done to his brother, the late Prof. E. L. Youmans, who further edited the book and at the same time saw it through the press. As usual with this kind of work delays were numerous, but the most serious and annoying were those necessitated by the intense and characteristic desire of the editor to place every statement in a form at once concise and accurate, whether as to the general proposition or its many details. For a man whose methods were invariably clear, direct and convincing the following extract from a letter to his brother is a genuine surprise ; and yet it was this very kind of work that made him the power that he was in bringing to the front modern scientific men and the scientifiic method:

"The last chapter of the book is to be the most important one. It will be quite a new feature, and I wish to make it the card of the work. It is the most difficult thing I ever attempted, and I have to do it many times over. I guess I have broken up, and restated the first section already ten times. I shall hurry it along as fast as possible, consistent with doing it rightly which is the first thing to be considered, for the success of the book is in question, and it is a matter of ten years' interest with no further trouble when done."

He also believed in doing but one important thing at a time : "I have not touched my lecture, nor shall I, till this job is finished."

When in London in '66, Prof. Youman was invited to lecture before the College of Preceptors. He chose as his subject the *Scientific Study of Human Nature*—and proceeded forthwith to grind it out. Desiring the criticism of Spencer, who well knew of what classic stuff the college was composed, he arranged for a meeting. In a letter to his sister : "With my tail feathers spread and in a state of infinite complacency I went, and returned trailing my glories in the infernal London mud."

"Poor man ! What could he do ? There was but one thing to do, and he did it, you had better believe. Faithful indeed are the cruelties of a friend. My lecture was fairly slaughtered. I had such nice authorities for everything. What are "authorities" to Herbert Spencer ? The pigs went to the wrong market this time."

"'A little too much effort at fine writing—forty-five pages. You have lost your point at the fifth page and not recovered it. Why, I thought you wished to make a sharp presentation of science in its bearings upon the study of human nature, and you seem to have entered upon a systematic treatise on physiology interlarded with bad psychology,' the unfeeling wretch! 'Strike out half, put the rest in type and work it up,' was the final injunction."

Youmans did it, and scored a success.

PELLETS.

How best to manage a husband: "Feed the brute."

English dentists still fill "fangs," and yet their discussions of the subject are headed "Root Filling."

When your broach fails to take and wind cotton perfectly, draw it a time or two through a once-folded piece of fine sandpaper.

According to Dudley Warner, "the faith cure requires no mind, and the mind cure requires no faith."

Whether you use thin plaster or oxyphosphate to fill joints, apply and work it into place with a fine steel pen.

From this time on discourage the use in the mouth by the patient of chalk and soda as antacids and urge the use of milk of magnesia. The introduction of this remedy marks an epoch in home treatment of excessive acidity of the oral secretions.

Because of the speed and ease with which it may be introduced, also because of its adhesiveness, a pledget of cotton saturated with oxyphosphate ofttimes makes a better temporary filling than gutta percha. It is especially valuable in children's teeth preparatory to later and better work. The cotton should be thoroughly wet with phosphoric acid before being dipped into the oxyphosphate mixture.

"Where to, Doctor, for your summer vacation?"

"'Way down' in Maine. I presume *you* go as usual to one of those summer schools."

"Yes; summer schools—for scandal."

To make corks acid-proof, soak them in a weak chloroform solution of gutta percha.

Many mouths are stretched by the dentist daily, but with the individual patient its from 'ear to 'ear.

The Bausch & Lomb Optical Company have at last succeeded in getting a stock of beautifully ground sections of human teeth. In some of them the process is still adherent.

New version: "Sullivan in all his glory was not arrayed as one of these."

The ODONTOGRAPHIC JOURNAL is not French, nor is it from Dublin, therefore "O'Dontographic" don't go.

Dr. Hofheinz, of Rochester, is still in Germany, living daily in hope of improved health. Part of his time has been devoted to bacteriological work in the University of Berlin.

We have nothing "agin," the man who invented work; but as for the man who planned and perfected working for a living, we think he might have employed his time in a better way.

There are fashions in thought as well as in dress and the methods by which they are changed are many and varied. Fiske says: "A sufficient number of funerals is sure to bring a change of fashion."

It escaped us at the critical moment to announce the fact in our April issue that Dr. Miller had been elected "Professor Extraordinary" in the University of Berlin. This we believe is "ultimate" in the line of educational promotion.

Said the president: "Incidents of office practice are now in order. Dr. Blank, has anything remarkable occurred in your practice since our last meeting?"

"Yes; a patient called this morning to pay his bill."

Dr. E. Parmely Brown is giving clinics in operative dentistry and porcelain bridge and crown work, in San Francisco, Salt Lake City and Denver. His method is to organize classes, or have them organized for him, and demonstrate in each place for a full week.

In his early days Herbert Spencer used to visit the venerable Thomas Carlysle, but in the course of time had to break off, because of the old man's thoroughly-ground-in habit of finding fault with everybody and everything under the sun. "His conversation," said Spencer, "is one long damn."

The *Medical Record's* recent dental spasm brings to mind the faultfinding of that journal a few years ago with dental terminology. Among other things objected to was "bibulous" as applied to absorbent paper. The criticism was of such value that we have utterly forgotten its point—if it had one.

The dentist had just introduced into the lady's mouth a set of plain teeth on a wax base plate, when he wreathed himself in his blandest of self-satisfied smiles and asked:

"How do they feel, Madam?"

"Very like a row of peanuts, Doctor."

Go to! Magitot has organized "The Society of Stomatology of Paris," and Philadelphia comes up with "The Academy of Stomatology," but Buffalo stomatologized away back in 1891, organizing the Buffalo Stomatological Club for the discussion of the purely scientific side of dental subjects.

It may not be known that our friend Catching of "Compendium" fame plays the muses, presumably by way of recreation. At times he is poetic, oftener rythmic, always pathetic. His latest is even now on our hook pending good behaviour. On this condition it may eventually find a place in his posthumorous works.

Semi-occasionally the *Medical Record* sees a dentist or hears of dentistry, and as surely as this happens it takes on like an elephant in a tan-yard. These spells are periodic, and may be timed even to a weekly issue. Just at present it seems that dentists are unclean, need sterilizing, fail to teach their patients how to prevent caries of the teeth, etc., etc. It is conceded the *Record* that "the mouth is a rich culture-ground for microbes." So too is an ink pot, and the *Record's* is without a rival. If one would know something of dentists and of modern dentistry he should seek his information without the precincts of the Bowery.

BOOKS.

TRANSACTIONS OF THE NEW YORK ODONTOLOGICAL SOCIETY, 1893. Edited by Dr. John I. Hart. Philadelphia: Lippincott Co.

TRANSACTIONS OF THE AMERICAN DENTAL ASSOCIATION, 1893. Publication committee: Drs. Cushing, Darby and Harlan. Philadelphia: White Dental Manufacturing Co.

TRANSACTIONS OF THE DENTAL SOCIETY OF THE STATE OF NEW YORK, 1892-3. Publication committee: Drs. Butler, Freeman, Palmer, Jarvie and Burkhart.

THE ORIGIN AND EVOLUTION OF THE HUMAN FACE. By Alton H. Thompson.

THE DESCENT OF FACIAL EXPRESSION. Same. Reprints.

SIR FRANCIS BACON'S CIPHER STORY. Discovered and deciphered by Dr. O. W. Owen. Detroit and New York: Howard Publishing Co. Vols. I. and II. Pp. 399.

THE
ODONTOGRAPHIC JOURNAL

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A NEW ERA IN DENTAL PRACTICE.

Through your courtesy* I am with you again, to reveal the silence of years which has culminated in what I am pleased to call "A New Era in Dentistry." Forty-five minutes is but a moment, which you accord me to condense forty years of active labor and practice. I cannot blame you for the restriction, as I have always written exhaustively and hours have been consumed by me, leaving no chance for discussion at the same meeting. I will hold to your order, and leave for the future other chances for details and the consummation of the work, that my efforts may not have been in vain.

The great Master once said, "Neither will they be persuaded, though one rose from the dead." The profession of dentistry, as that of medicine, is demanding; "What shall we do to be saved?" We are in the light of the waning days of the nineteenth century, asking each other for some system by which we can be saved the humiliation of failure in dental practice to save the human teeth, one upon which each and all can rely

Before we can attain to any true system that shall work universally, as in the laws of interchangeable mechanics, we must accord to some one the right from a life of precedents to be umpire in his line of work.

The title of this paper is an assumption, and all I ask is to follow, and for once get out of the old ruts and walk upon the broad plane of liberality and common sense, and with unselfish eye and charity calmly act and show that something good can come out of Nazareth.

Every journal bears upon its pages the desire of men to flee to a practice that will bring universal good results. Let us ask where are our failures? Are they in men or things or materials? Are they in false education? Is it that new difficulties arise to baffle every past partially-successful effort? Have we really been successful in anything we have done to insure us in following the same old cause? The cry is for new light and new methods. If the world knew how few teeth are saved by us for any number of years they would not spend time, health, and money, but give up to the juggernaut of destruction, and extraction would be the rule, even with the wealthier classes. The poor and medium classes have had to give up their teeth in early life because of failure upon failure of even the best men. Then it is a fact, dentistry of the present hour is not near the goal of perfection in practice we long for. Why is it? Is there any relief? When shall we commence in our declaration of failure?

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* New York Odontological Society.

THE PRIME NECESSITY.

First. Men. With all the vaunted advantages of colleges everywhere, how few who enter their sacred precincts are fitted by nature, general education, special talent, surroundings, or by long family precedents. Could we but be as true to principles and bold to assert as was Plato when he had inscribed over the garden-gate to his studio, "Let none enter here who know not geometry," we would then have some hope for the future.

Any one can be taught to fill a cavity with the instruments and material at our disposal, but when to do it and how it should be shaped to insure its future usefulness is quite another consideration. We must not teach men that our art is solely to allow teeth to decay and fill our coffers from Nature's weakness. Are you prepared to-night to lay down your life as the missionary and for the good of humanity attempt to save a tooth in its purity whether fortune in gold favor you or not?

Are you ready to ignore self and be the benefactors of your race, and adopt a system that promises to save more teeth, more pulps, give greater beauty, and more usefullness? If not, then step aside.

Medical men can well ask for "preventive medicine," for every honest M. D. soon learns to give less and less medicine, and rely not only on Nature, but in knowing the laws of hygiene, even if he be dethroned for his empiricism.

We, as dentists, have an entirely different field, for we have millions coming to us where no law of prevention can be applied. We can only save and restore the lost structure by our cunning and art.

With the rising generation, we can do, if we have a system to prevent the ravages so universally found in the human race, that which will preserve a much greater number in their purity and also check decay without filling with gold and other materials, and drive from our practice artificial substitutes in the majority of cases.

This leads us to a most important matter,—ignoring the "greed for gold." If we are ever so perfect in our manipulation and able to preserve, yet if we do not have that charity to purge ourselves from the "lust for gain," and do for others as we would do for our own families, it will not bring us success at the end of our journey.

GENERAL CAUSES OF FAILURE.

Let us take up the general causes of failure. We cannot ignore the almost utter worthlessness of tooth-structure. This we will call the "predisposition." My experience is that we are more degenerate every year, and the fight is harder to save teeth. It requires wisdom, foresight, and skill to dare attempt the anticipation of caries. I have attempted to make the effort. *True, anticipation, as a general rule, cannot be relied on* by the average dentist. But there is much that can be done to check caries in its very incipiency and that without filling.

The materials as substitutes for lost structure we will now take up. Gold is acknowledged by the profession generally to be pre-eminently the best, and we want no better testimony than to look into any and every mouth and behold gold, gold, gold. Fillings no larger than pin-points and heads dotting every valley. Men talk and write gold, and yet they deplore it does not save. They ask for the reason, why? The "New Departure" said "*never use it.*" Here are two extremes, and neither has shown why either should be practiced. You ask for testimony. I refer you to the many kinds of gold and preparations or forms of gold, each manufacturer claiming special features for success; the immense quantity of it used; the cases that have been filled and refilled. I filled a superior central incisor last week with Abbey's gold that had been filled fifteen times before. There was left for me a tooth with living pulp with the palatal surface one half gone and both mesial and distal surfaces involved to the cervix. Think of it! None of you can deny that gold is the idol of the profession, and a man who talks against it is risking his reputation.

Gold, *per se*, is good for preserving tooth-structure. Compatibility has nothing to do with it. Adaptability is all of it! If tooth structure is worthy as a base and a man knows how to line the walls of the cavity, it will preserve, provided the cavity is rightly shaped and the contour is given such form as to preclude any possibility of the active causes of caries. There is no greater error made than to suppose it is necessary to have various qualities and forms of this metal.

IDOLIZE IT.

Make to yourself an idol in this metal and, in spite of the manufacturers, follow it; learn to manipulate one kind, and you have all you can ask, and there will be less failures. But, the sin is not only in seeking for some better form of gold, but in learning how to use but one or two, and have the con·cience and honor to confess that the fault is in yourself, and discriminate when and where it should be used. They tell us it quite always fails at the crevix, and, to attest this, they reproach the gold and use amalgam or gutta-percha at this point. It is not the gold, but it lies in you and your judgment and conscience. Franklin showed he was a philosopher when he said he "would not give much for a mechanic who could not bore with a saw and saw with a gimlet."

Some dentists have piled up around them every new instrument that comes out,—every new plugger-point with serrations of greater or less depth and extreme fineness and all sizes,—every form of mallet from the thud blow to the most approved power mallet And withal, they fail, but few recognizing the fact that perfectly smooth points will do the whole business perfectly in adapting one fold of gold to another though perfectly burnished.

Tin and gold and hand-pressure is another proof of gold's failure when used alone. I could multiply proofs of failure, but enough, —gold is a failure!

THE PLASTIC CRUTCH.

Take amalgam. Look at the tons of it used; yet, so many men say they do not have it in their office.

Do you ask for proof of failure?

Take the craze for "copper amalgam." What a curse it has been to the profession and their patients! I never used it once! I saw what it was when I looked into patient's mouths when I was abroad. Had they known what proper contouring was they would never have used it so universally in all cavities.

It has been a stench in the nostrils of nearly every American dentist.

Has amalgam any good qualities in itself? Have we any good alloys?

How many men know how to use it and get the best results? What curses have been heaped upon its hallowed head? Where is the man who dares say he uses it? Anathemas come thick and fast from the M. D.'s of both old and new school as if they were the Supreme Court to sit upon its merits

Several years ago, at one of the first meetings of our Odontological Society of Pennsylvania, one of its oldest and most prominent members went so far as to place on record in the Proceedings,—"All men, falling away from manipulative ability, lean on plastics" To-day he is experimenting to find an ideal alloy to help him out in his failures with gold. How sad such a record! Who among you so mean as to deny using it and without "apologizing."

I say it is one of the grandest filling-materials we have,—and while I have spent nearly thirty years in inventing power mallets and special smooth oval points for gold work, I confess I throw all aside very quickly, and while I delight to wield the electric or mechanical mallet in distancing time and space with gold, yet I use more amalgam to-day than ever before in my life.

I am thankful I had the courage and principle to stand by it, and recommend and show how much could be done when condensed under Japanese bibulous paper. To me it is a sheet-anchor for the class of cases every day coming to me from others. If you use amalgam and wish to make your practice a success with it, learn how to manipulate it and prepare your cases for its adaptation.

ANOTHER.

Oxyphosphate,—what of it?

Is it good as a permanent filling alongside of gold or amalgam? Is it a failure also?

What does the profession say of it?

Everywhere you hear the cry, it gives way at the cervix in all cases and soon wears away, and is not fit for contour or permanent work. It is not to be relied upon!

If this be true, then it is useless to place it in carious teeth.

That it will preserve tooth-structure from further decay admits of no doubt whatever?

That it will preserve the contour of the tooth is certain in the bulk of cases!

That it will not destroy the pulp in near contact with it is equally sure.

That it will preserve tooth-structure with nearly all the decay left in the cavity and without much or really any shaping is incontestable, which, further on, I will show for a fact that I am willing to stand by and from a part of the new era of which I am here to speak. It is beyond value when you know how to mix it, how to manipulate it, how to shape it; how to treat it before you remove the dam or allow it to get wet; how to treat the phosphoric acid, to keep it from crystallizing, insuring you thereby a better result in every way; and when proper precautions are taken with these fillings, how inestimable are the results, and beyond cavil and doubt!

I cannot say too much for it,—a good article. But, just here let me say that, when you can get a good article use no other kind in the mouth; as I forgot to tell you of amalgam, as with gold, use one kind only, that will work as well under water as above the surface. The oxyphosphate, of course, will have to be kept absolutely dry to be a perfect success.

AN IDEAL MATERIAL.

In nearly every sense I know of nothing so important as pink base-plate gutta-percha.

To teach you how I use it for the preservation of the human teeth, both temporary and permanent, will be the foundation of a system that, if I have had any success at all, I can attribute to this one article as much as or more than any other filling-material.

In conjunction with this I cannot overestimate the value of the discovery of the laws of articulation and the articulator that bears my name, and of which I am more proud than of all my other productions. Without knowing what I do of articulation, the gutta-percha might never have been seen in the same light by me.

Let us review, now, before I enter upon this simple revelation of truth, what and wherein are our failures.

LIST OF FAILURES.

I told you, poor elements in tooth-structure as the grand predisposing cause of failure.

Worthlessness of tooth-structure as a very great cause of failure, let us be ever so competent and with the best of materials for restoration.

The materials as substitutes for lost structure,—gold, amalgam, oxyphosphate, gutta-percha, and tin,—and how failure comes from each and all.

The failure that comes from not understanding the laws of articulation, and which shows how the loss of one tooth affects all the teeth of both jaws.

The failures that result from the indiscriminate cutting of approximal surfaces in filling and the great change of relationship between the upper and lower dentures.

And the failures that ensue from the want of a definite system in knowing what to do in the keeping of the original articulation, and, when lost from bad dentistry, restoring it again to its proper relations that each tooth will bear its exact burden and no undue pressure be brought to bear upon any one.

The importance, finally, of those laws and this system in the prevention of recurrent caries and the blotting out of the greatest cause for pyorrhœa alveolaris,—which comes largely from undue pressure and use of the teeth thrown out of arrangement by non-restoration of contour.

I cannot enumerate all the causes as now acknowledged by the profession. Look into every journal, go into every depot, talk with every dentist you meet, scan the proceedings of every society, go where you will, and we can infer from it all.

Dentistry is a failure because it can neither anticipate nor prevent decay superficially or arrest it when substitutes are made to take the place of lost tooth-structure.

We have labored in vain, and I am invited here to tell you whether I am satisfied with the practice I have instituted after forty years of servitude.

To say that I am really satisfied is not true. But I am conscious that my practice shows that I not only anticipate successfully, but preserve teeth superficially decayed without filling, and, when too far gone for this practice, then the conscientious use of the materials we have at hand enables me to snatch from the ravages of the "tooth of time."

Yes, I am happy to tell you how much can be done to rescue our profession from its perilous practice. But, I know you will not adopt what I tell you! Or at least the bulk of dentists will not, for they will fear starvation.

BRAINS A BIG ITEM.

If you can have the courage to charge a patient as much for tin, amalgam, oxyphosphate, gutta-percha, or beeswax,—which is a valuable material to save trouble,—then you have accepted the highest creed I offer you in my "New Era." Unless you can dare to face the public and say to them brains must be paid for, and all our operations are upon brain work as the standard of price, then do not accept my creed,—go on as aforetime. Hobbs, the celebrated locksmith and maker of the first complicated bank-locks, which were marvels of ingenuity, was brought before a bank committee to have him show cause why he asked such high prices for his inventions. They had him take the lock to pieces, and inquired what each piece would cost to duplicate it. When the sum total was made they found it did not foot up the price Hobbs asked for the completed lock. How is this Mr. Hobbs? He then looked over all the items and said to them, "Gentlemen, there is one item you have left out." They could not tell what it was,—when, to their chagrin, he said, "Brains."

But with this blot upon my career, "high charges," I am proud; and, if any one thing has added to my success above all else it has been in daring and boldness to make people pay what I believed my brain as a machine was worth.

I often say to my patients now, when speaking of prices and they want an estimate made, I cannot do it, for "I have no more right to cheat myself than to cheat you."

Then, I am sure you will agree with me that this first article of my creed is worthy of following. If not, then do not listen to my simple system of practice.

It is not as manual laborers we can show our highest skill! No: one piece of timely advice—the extraction of one tooth; the teaching how to use a brush and what kind to use; and in many ways, where no labor at all is performed—is worth hundreds of dollars, and besides, a deep gratitude for the salvation from vandalism and sacrifice of Nature's most beautiful pearls and God's grandest piece of architecture.

Let us all dare to do right, even if we get no immediate compensation further than our own approving conscience.

Let us all dare to stop when we are in doubt, and the kindly consultation with another brother practitioner may be of the greatest value to us and our patient.

If we must link ourselves at all to the medical men, let us emulate their example in one thing at least,—anticipative medicine, or, as they have it, "preventive medicine."

As I have previously told you in this article, I have held opinions for many years that with every disadvantage impeding our course we can anticipate and cheat the "tooth of time" of its ravages. Yet it is a dangerous remedy in the hands of ignorance.

MUST HAVE SOLE CHARGE.

Unless we can have sole charge of patients from the second year on, and no one else to interfere, we cannot hope to do our fullest duty and found a practice for all men to follow.

Ignorance, stupidity, and downright dishonesty give us more trouble than we like to admit.

I have told you only of a few of the causes of our failures. One, above all the rest, faces us, and a wail is sent up everywhere. "Recurrence of decay at the cervical border;" no man yet has dared to say he was conqueror.

The next most treacherous is what is known as pyorrhœa.

I never use gold in the temporary teeth, seldom amalgam or tin, save on grinding surfaces, where cavities are very small or very large and no pulp involved in the part, and oxyphosphate very seldom, and only where I can keep it perfectly dry. Not that any of these articles are not valuable, but the preparation of cavities and the situation of decay, the near approach to the pulp of nearly every proximal decay, and the age of the subject preclude their use Never demoralize any youthful client by much excavation or formidable show of instruments, or by slow, sluggish movements. My aim is expedition ; as few minutes in the chair as possible ; inflicting but little pain and inconvenience,—gentleness, kindness, and yet positiveness.

My greatest ally as the filling-material is pink gutta-percha, such as is used for base-plate, and further on you will see how far I use it in the treatment of the permanent teeth. Aside from its use for a stopping on all approximal surfaces, there is one grand object in view to be ever held in mind, the importance of the position of the first permanent molar when it emerges. Unless this base column, or abutment if you please, is not kept well back towards the ramus then *irregularity will come to the incisors.* It is not enough to merely stop decay and stuff in amalgam or oxyphosphate ; we must keep the temporary molars from approaching each other more than normal. and prevent the alveolar processes from encroachment and absorption from direct pressure of the roots of the temporary molars, which is invariably the case when the approximating surfaces are cut by caries and allowed to trespass on each other. We cannot use a separator here to gain space ; we dare not cut or shape the cavities for a metal filling for fear of the pulp. What is to be done ?

If possible, as soon as the least decay is noticed on the approximal surfaces and you can get in from the crown or on the buccal sides with the least excavating, by hand or machine, if it must be used, whether you can keep the cavity dry or allow it to remain moist, stuff in the gutta-percha forcibly between the teeth, smooth, and let alone to watch every three or six months. Where the cavities are large when you first see them, remove no decay over the pulp. Break down all superfluous walls, saturate with carbolic acid or creosote, force in a lump of the gutta-percha by filling all space as one filling, and let it go until the teeth have become so far separated by the act of mastication—not by expansion of the material—as to have replaced with another or a patch on the surface. Now, here is the point I wish to make that you have never recognized as a factor, because you have ignored the laws of articulation.

By this means I save from future decay and the risk of pulp exposure; but, above all else, I give a condition that enables the child to use with impunity every part of the jaws with hard or soft food, and no pain or fear of it, which no other plan could offer. And, above all this, I drive the first permanent molar so much farther back upon the ramus that, the nearer it is to the condyle or point of motion, the wider it keeps the jaws apart at the incisors, and prevents absolutely the too great encroachment of the lower upon the palatal surfaces of the superior incisors, which, if allowed, would destroy normal articulation,—make too deep an overbite and underbite, and, withal, cause an overlapping of the inferior incisors and the full use of the jaw teeth, because, in the lateral movements of the lower jaw, the incisors would strike first too long before the molars could come in contact, and, really only the up and-down movement would be attained.

MUST GRASP ARTICULATION.

This you could never know, nor can you appreciate now, unless you fully grasp the laws of articulation. This has never been taught, and, save a few followers of my special friends, is not practised.

This was a revelation to me when, in 1858, the articulator was born. And, as soon as the pink gutta-percha made its appearance, with rubber plates for trial or base plates, before they were brought forth, I struck upon this treatment and have followed it ever since; and the results have proved I have but few cases of irregularity in my own immediate practice, and those but simple ones, and seldom a pulp exposed for treatment, and but few demoralized subjects, and a brighter future for the permanent set, with plenty of room and to spare for them to come in. Should decay occur on the anterior approximal surface of the first permanent molar, I prevent its spread and in many cases anticipate or treat it superficially; and, if to fill, do so when I have all the room I want,—but seldom with gold even then, as I do not know the exact position the second bicuspid will take; besides, most of the cavities are very small and not susceptible of contouring over all the approximal surface, which has to be done if we contour at all on any surface. From the temporary incisors of children I generally remove caries when small, and do not scruple to fill with amalgam if they need filling. I have never used the dam for any child except when the permanent molars required filling

Lastly, to detect the incoming permanent tooth when the temporary one shows no sign of its approach, I, at the proper time, use an exploring needle under, or in some cases directly through, the gum to feel for it. It is the precursor of events, and saves much irregularity and fear. Without this precaution many temporary molars that become fastened between the permanent molars and first permanent bicuspids would remain in for years too long. So much for the treatment to the twelfth year. Gutta-percha is my sheet anchor.

In the permanent incisors anticipation is generally adopted; if decayed, oxyphosphate or pink gutta-percha is used, never gold. I seldom have any fillings at all in these teeth. The sixth-year molars on buccal surfaces are generally smoothed and decay arrested, or, if to be filled, pink gutta-percha. It is impossible to save every tooth without filling; yet, even with the worst of these cases, *superficial* decay can be arrested and thousands of fillings saved, and our art made a comfort and a blessing.

RECURRENCE OF DECAY AT THE CERVIX.

You all admit that recurrence of decay at the cervical border gives you the greatest difficulty to surmount, and as yet you have not reached the cause nor the remedy. It must be admitted that if this one thing alone can be mastered, we have overcome our most powerful foe.

It is a fact not to be denied that every dentist cries out for some method to prevent recurrence at the cervix. This is positive proof that every one has hands full of proximal cavities from the cuspid back. Every one must admit that contour fillings alone have been the only help or partial cure, although it has to be repeated or requires oft patching.

A case presents where caries have run wild. Not an approximal surface scarcely but is involved. No pulps quite exposed, but threatening. Every tooth has been filled and refilled, and by more than one dentist. Contour has been attempted. Where the fillings of gold remain they are so undermined there is nothing but utter annihilation unless all are removed. The teeth from their loss of proximate surfaces are all out of articulation, which can be best seen by taking an impression and putting the casts in my articulator. Look closely at the cervix, and you will find the root of each so close that no thread can be forced through, and the decay is far up under the cervix. Look further and probe for the alveolar process, and not a vestige of it remains for a quarter of an inch up. Look also to the second molar where the first has been extracted, and on that side the process is gone far down and nothing but loose gum tissue remains, and is constantly receding, and whenever a tooth has been lost the process about the cervix absorbs as the body of the jaw absorbs.

In this state of affairs you put on your dam and separator and you obtain a slight widening and at once fill permanently the excavated tooth. No attention is paid to the articulation of the teeth. You have no desire to wait, and you rush on headlong to fill and get your pay. The rest of the teeth are left without anything in them until one by one you have had your patient at least twice a week for months, two hours or more at a sitting, until they are exhausted and condemn dentistry, and while you are rushing through to complete every cavity with a filling you have done nothing to prevent further rapid decay, and pulps become exposed and the patient has to suffer.

Now, I know this is the case with nearly every man's practice. I see it every week, and I know from personal contact in conversations with patients of others who have not come to me for treatment.

Now, you can do better than this and not only retain your patients, but bridge over time as well as space and fill and treat at your leisure.

I will take the same mouth just illustrated and without placing in one single permanent filling of any kind of metal treat it with pink gutta-percha alone, with a little of the white as a facing, where necessary. I cut out only partially the cavities on one side of the jaw or jaws, always exposing every grinding surface where the approximal is gone and make compound by running all of the cavities into one, seldom leaving any approximal cavity to stand alone but opening it into the grinding surfaces. This is a cardinal principle with me. There is one surface or border I complete at once, and that is the cervical, so that I never have to touch it again, and this I cut so far up as to not only remove all caries, but where I know the gum and process will grow up and over it. This is finished, and to enable me to do so I forgot to say I never put on the rubber dam in any case until I fill permanently, when the cervix is firm and will admit of its adjustment. It is easy to stop the blood with perchloride of iron, creosote, or any styptic.

TREATMENT.

And now for the further treatment. Into all the spaces I have made on one or more sides in one or more teeth I place great pieces of pink gutta-percha, and, with no seperation between them in any case, stuff the whole intervening space, trim, and let alone. This I do until every place is filled in. I dismiss the patient, and have him call in three or six months or a year, as I may please ; and, as I find the teeth wide enough apart for a plus-contour filling, and the alveolar gum border and process is in perfect health, and the process has grown up to the gutta-percha, then I fill only those that show that they are far enough apart at the cervix to permit a healthy, full process to grow in order that the gum will have proper substance, and cleave to the root and cover up and over the margin of the filling at the cervix. In this, I tell you, is your future security at the alveolar border.

No one has ever called attention to the difference in width of the approximal spaces at the cervix for the bicuspids and molars. The gutta percha should remain in until double the width or space is gained between the molars than the bicuspids, on account of the greater size of the molars, where more proximal surface is in contact and no room left for cleansing, unless the spaces are very much greater than normal, and the contour made to suit this issue. Here is where you will say, "You will destroy the articulation and cause greater strain on the fillings and also the teeth." No, you are mistaken. When the whole of these proximal surfaces are filled with the semi-elastic stopping, and the act of mastification set up, the teeth that at first are out of the normal position and only touch on part of their crown surfaces are now allowed to readjust themselves; as the gutta-percha will give where the greatest pressure is brought to bear, and where least resistance is offered, no change occurs. I am not mistaken in this. Try it, and watch a few cases if you cannot believe me.

COMPENSATION.

This method is a test for any further treatment, which, if needed, can so easily be done. It permits of weeks, months, and years before the permanent filling need be introduced. No danger of decay, none of loss of structure from fracture. And, in fact, you can dismiss the patients thus treated with the greatest indifference as to the issue. Do you ask whether I charge for all this work, and when I send in my bill? I charge for even my thoughts as well as my work. My patients never object, but often beg me to leave in the gutta-percha.

Thus I practice with all; and I am happy in this, knowing that I do far more good, am not troubled about immediate root filling, —fillings falling out,—"conservative treatment of dental pulp." Nor does pyorrhœa ever invade upon my domain of original work, because I know the value of articulation, and how to make every tooth perform its individual and collective function, and no undue pressure given it to press or work its life out of it and give rise to the denudation of the peridental membrane ; nor is the food ever found pressing up into the cervical border and remaining, nor the cervix so weakened by want of contact with firm alveolar processes, and the gum is left to hug the root at this vital portion so tightly that nothing ever creeps in to cause recurrance at the cervix

SHOULD BE SUED.

Any dentist who allows his original patient who follows orders to have pyorrhœa should be sued for damages. See that no food presses on the gum border ; see that no tooth is unduly pressed and contorted by false articulation, caused by improper width and contouring ; allow no biting of threads, cracking of nuts, biting of ice upon one tooth only ; or, when a tooth, or teeth, has been lost, see that the articulation is restored,—and, my word for it, gout or no gout, syphilis or disease, pyorrhœa will not come, except filth and malaise of one or more teeth

Gutta-percha used as matrices for gold, amalgam, or oxyphosphate fillings I will not dwell upon ; you need nothing better. For holding teeth in position after correction where there are cavities in both, I need only mention it. As for assistance on the temporary and permanent teeth, to keep the ligature from slipping down on the cervix by carrying the ligature through it ; for fastening pins into roots for crowns ; as a medium between crowns and roots to prevent further caries ; as a protection to all roots when a gold crown is used ; and, in fact, as a factor in our practice, there is nothing to fill its place.

In only one instance it will not do. Never place it in contact with an amalgam filling, especially when it is covered up over a nearly exposed pulp, for it will oxidize the amalgam and discolor it and make it valueless at the margins. White gutta-percha is not so. The sulphur in the pink will do the work ; hence I say this contact with amalgam is a failure. I am in love with it, and without it I I would be lost.—*International.*

THE LATE PROF. WINDER.

Died at Baltimore, Md , July 18, 1894, Professor R. B. Winder, Dean of the Baltimore College of Dental Surgery.

He was born July 17, 1828, at Accomac Court-House, then called Drummondtown, on the Eastern Shore of Virginia. He was the eldest born of Nathanial James Winder and wife, Sarah Upshur

Bayly. The family were in direct descent from Sir George Yardley, one of the early governors of Virginia.

Dr. Winder was educated at Princeton and the Virginia University. He married, at an early age, into the Curtis family and settled in Accomac County on one of the old homesteads, called "The Folly," where he resided until 1861. When the war broke out between the North and South, he was among the first to tender his service and that of his company to the Confederate States. At the close of the war, like the majority of those connected with the "Lost Cause," he returned to his home without sufficient means to live as he had been accustomed to, in luxurious ease and elegance. With characteristic energy he set to work to build for the future, instead of vainly repining at his serious losses and much suffering. It was said of him by the late Governor Henry A. Wise, who had known him from boyhood, that "Dick Winder had lost and suffered more than any man he knew, and with less complaint."

Dr. Winder was married in April, 1869, to Miss Kate Dorsey, of Frederick County, Md. The same year, he graduated in dentistry at the Baltimore College of Dental Surgery. His interest in dental education was a prominent feature of his active life. He organized, in company with others, the Maryland Dental College. This was merged into the Baltimore College of Dental Surgery, of which he eventually became the Dean. His interest thereafter was largely bound up in college work. Professor Winder's ability as an educator was recognized throughout the dental profession, and largely through his influence the Baltimore college prospered as never before. His work was thorough, and his kindness to the young men under his charge was marked in character as it was decided in its influence for good. He was the originator of the idea of a national organization of dental colleges of the United States, and this bore fruit in the formation of the National Association of Dental Faculties, the most powerful organization probably ever established. Through its influence the entire course of dental education has been changed and the standard advanced beyond the anticipations of the most sanguine.

The intimate relations of the writer with Dr. Winder long since led to the conclusion that his genial character, scholarly ability, and progressive tendencies were not as well understood as they should have been. He was earnest in his convictions and faithful to his friends, and in his death the profession has to mourn one who faithfully worked for its best interests to his last hour.—*International.*

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The eleventh annual session of the National Association of Dental Faculties was held at Old Point Comfort, Va., Saturday, August 4, 1894; the president, Dr. Smith, of Cincinnati, in the chair.

The resignation of Dr. J E. Cravens as secretary was accepted, and Dr. Louis Ottofy, of Chicago, was made secretary *pro tem.*

The following faculties were represented :

Baltimore College of Dental Surgery—B. Holly Smith.
Boston Dental College—J. A. Follett.
Chicago College of Dental Surgery—T. W. Brophy.
Harvard University, Dental Department—Thomas Fillebrown.
Kansas City Dental College—J. D. Patterson.
Missouri Dental College—A. H. Fuller.
New York College of Dentistry—Frank Abbott.
Ohio College of Dental Surgery—H. A. Smith.
Pennsylvania College of Dental Surgery—C. N. Peirce.
Philadelphia Dental College—S. H. Guilford.
State University of Iowa, Dental Department—W. O. Kulp.
University of Michigan, Dental Department—J. Taft.
University of Pennsylvania, Dental Department—James Thurman.
Vanderbilt University, Dental Department—H. W. Morgan.
Louisville College of Dentistry—F. Peabody.
Southern Medical College, Dental Department—C. V. Rosser.
University of Tennessee, Dental Department—J. P. Gray.
University of Maryland, Dental Department—F. J. S. Gorgas.
Royal College of Dental Surgeons of Ontario—J. B. Willmott.
Columbian University, Dental Department—H. C. Thompson.
Northwestern University Dental School—G. H. Cushing.
American College of Dental Surgery—Louis Ottofy.
National University, Dental Department—J. Roland Oliver.
College of Dentistry, University of Minnesota—T. E. Weeks.

The following schools were admitted to membership during the meeting :

Western Reserve University, Dental Department, Cleveland, O.—H. L. Ambler.

Western Dental College, Kansas City, Mo.—D. J. McMillen.

With reference to the application of Howard University, dental department, the executive committee recommended that in consequence of changes in and inadequacy of its dental department the application be rejected. Adopted.

The report of the executive committee recommending the admission of the University of Buffalo, dental department, to membership, was amended by the addition of the following clause, and then adopted: "When the honorary degrees conferred on Messrs. Southwick and Howard are returned to the university and revoked, and official notification of such revocation filed with the secretary of this association."*

The amendment to rule 5 offered by Dr. Hunt last year, making the rule read as follows, was adopted unanimously:

> "(5.) STANDING OF UNDERGRADUATES IN MEDICINE.—Undergraduates of utable medical colleges, who have regularly completed one full scholastic year, having attended at least seventy-five per cent. of a five months' term, and passed a satisfactory examination in the studies of the freshman year, may be admitted to the junior grade in colleges of this association, subject to other rules governing admission to that grade."

The following new applications for membership, with their recommendations, were reported by the executive committee:

Dental department, Cleveland university of medicine and surgery, Cleveland, Ohio. Recommended by Drs. J. Taft and J. E. Garretson.

Cincinnati college of dental surgery, Cincinnati, O. Recommended by Drs. James Truman, T. W. Brophy, F. J. S. Gorgas and J. A. Follett.

Birmingham dental college, Birmingham, Ala. Recommended by Drs. H. W. Morgan and C. V. Rosser.

University college of medicine, dental department, Richmond, Va. Recommended by Drs. F. J. S. Gorgas and H. W. Morgan.

Atlanta dental college, Atlanta, Ga, Recommended by Dr. H. W. Morgan and the faculty of the University of Tennessee, dental department.

The amendment to by-law 4, which was offered by Dr. Hunt last year, was laid on the table.

The resolution offered last year by Dr. Sudduth, directing the addition of Latin and physics to the entrance examination, was also laid on the table.

The special committee appointed last year to consider the matter of the vote of censure passed upon the Baltimore college of dental surgery reported, through its chairman, Dr. C. N. Peirce, recommending that no further action be taken. Adopted.

Dr. Louis Ottofy offered a recommendation, which was adopted, that all colleges, members of this association, shall increase the college course of 1895–6 to not less than six months.

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*The Dental Department of the University of Buffalo complied with these conditions on August 13, 1894, and is therefore admitted into full membership.—LOUIS OTTOFY, *Sercetary*.

The following resolution from the Executive Committee was adopted :

Resolved, That any college or colleges making application for membership in the National Association of Dental Faculties shall be required to secure and present to the executive committee the approval and indorsement of the board of dental examiners of the state (where such boards exist), in which such colleges are located, before their application can be considered.

The following from the executive committee was laid on the table :

Resolved, That we regard it as inconsistent for any member of a faculty of any college holding membership in this body to at the same time be a member of any state board of dental examiners.

The report of the *ad interim* committee with reference to charges preferred against the University of Maryland, dental department, was referred to the executive committee, which reported as follows:

"Your executive committee respectfully report that they find that the University of Maryland, dental department, in the reception of certain students did violate the regulations of this association, through a misapprehension of the rule, as it is interpreted by your committee, that the regualar sessions of all colleges close with their commencement exercises."

The report was adopted.

Dr. Guilford moved that rule 11, p. 12, of the "History" be understood to mean that students coming from a college not a member of this association will not be given credit for any time spent in such institution.

The annual dues were increased from $3.00 to $5.00 on motion of Dr. Cushing, the increase to take effect in 1895–6.

On motion of Dr. Truman, the special committee on preliminary examinations wae instructed to have prepared by a competent person and present at the next annual meeting a list of questions of a standard covering every branch required in grammar schools up to the point of admission to the high schools.

On motion of Dr. Abbott, it was ordered that each college should each year present its announcement, noting any changes, the secretary to note and publish all important changes in the annual report of the association.

On motion of Dr. Morgan, all the schools were required to comply with the rule regarding dissections.

On motion of Dr. Ottofy, a committee of three was appointed to revise the constitution and by-laws, with the further instruction, on motion of Dr. Truman, to drop the qualifying term "by."

The following were introduced, and under the rules lie over till next year :

By Dr. Peirce :

Resolved, That in view of the recommendations of the executive committee, this association will require that all colleges, members of this association, shall extend the term of the session of 1896-7 and of succeeding sessions to not less than seven months each.

By Dr. Truman :

Resolved, That on and after the session of 1896-7 the regular session of each of the colleges belonging to this assaciation shall be extended to four years.

By Dr. Ottofy :

Beginning with the session of 1896–7, the examinations conducted by the colleges of this association shall be in the English language only.

By Dr. Ottofy :

Beginning with the season 1885–6, no college shall be permitted to retain membership in this association if it is conducted or managed, in whole or in part. by any person or persons who do not practice dentistry in accordance with well-organized and generally accepted forms, generally known as dental ethics, or if they are owned in whole or in part by men or women who are engaged in disreputable dental practice, or if any college have upon its list of trustees, the faculty, demonstrators, or in any other capacity, any one who does not practice dentistry in accordance with the principles above mentioned. This shall refer to dentists only.

By Dr. Ottofy :

Beginning with the session 1896–7, the following shall be the requirements for the admission of students to the colleges of this association :

a. A certificate of having successfully completed at least one full year's course of study in the collegiate department of any college or university registered by the regents of the State of New York as maintaining a satisfactory standard.

b. A certificate of having passed in a registered institution, examinations equivalent to the full collegiate course of the freshman year, or to a completed three years' academic course.

c. Regents of the State of New York pass cards for any forty-eight counts.

d. A certificate of having passed the matriculation examinations of any university in Great Britain or Ireland, or of having completed a course of study recognized as an equivalent therefor.

e. A certificate of graduation from any gymnasium in Germany, Russia, or Austria.

f. A certificate of the successful completion of a course of five years in a registered Italian *ginnasio* and three years in a *liceo.*

g. The bachelor's degree in arts or science, or snbstantial equivalents, from any registered institution in France or Spain.

h. Any credential from a registered institution, or from the government in any foreign state or country, which represents the completion of a course of studies equivalent to graduation from a New York high school, academy, or from a registered Prussian gymnasium.

By Dr. Gray :

Resolved, That law 7 ot the by-laws, which now reads "attendance upon three full courses of not less than five months each in separate years shall be required before examination for graduation," be amended by substituting "six" instead of "five," to take effect on and after the year 1896-7.

By Dr. Willmott :

Resolved, That at least twenty-nine months intervene between the beginning of the freshman year and the date of graduation.

The Committee on Text-books presented the following report, which was adopted :

Your Committee on Text-books would report that only two works of this character have been presented for its consideration :

One, a work on "Dental Anatomy and Pathology," by Dr. C. F. W. Bödecker of New York, 700 pp.; the other a smaller and less pretentious work of about 75 pp., on "Operative Technics," by Dr. Thomas E. Weeks, of Minneapolis.

Both of these works are in press and nearly completed. The treatment of their subjects is full, clear, and concise, and the illustrations numerous, well executed, and for the most part entirely new.

Your committee would therefore recommend these two works for indorsemen as text-books.

Suitable resolutions regarding the death of Drs. R. B. Winder and W. H. Eames were presented and adopted, and the secretary was instructed to communicate a copy to their respective families.

The following officers were elected for the ensuing year: Frank Abbott, president; S. H. Guilford, vice-president; Louis Ottofy, secretary; H. W. Morgan, treasurer; J. Taft, B. Holly Smith, and Thomas Fillebrown, executive committee; James Truman, Truman W. Brophy, and Francis Peabody, *ad interim* committee.

Dr. Abbott, the newly elected president, was installed, and appointed the following committees:

Committee on Schools—J. A. Follett, F. J. S. Gorgas, Louis Ottofy, C. N. Peirce, and Truman W. Brophy.

Committee on Text-books—J. D. Patterson, A. O. Hunt, J. B. Willmott, T. E. Weeks, and J. P. Gray.

Adjourned.

ROT.

Dr. Stainton's remarks, at the banquet in his honor by the so-called opposition to the Dental Department of the University of Buffalo, on his return from his questionable but highly successful (?) mission to the National Association of Dental Faculties, at Old Point Comfort, were in the nature of an informal report of what had taken place there, with reference to the admission of the Dental Department in question to membership in the Association, and to the *Courier* he gave the following report of what he said:

In order to understand the question at issue, something should be understood of the formation of such a department. The first move looking toward the formation of a dental school was a meeting of 13 dentists in this city one evening in March, 1891, to consider the project. The outcome of that meeting was the appointment of a committee of five to consider the matter and report at some future time. That committee never did report, but a fragment of the committee went on and formed a school. It soon became rumored that honorary degrees were to be conferred for the purpose of qualifying two men for positions in the faculty. The National Association of Dental Faculties had some years before prohibited such conferring of honorary degrees. This fact was well known to the man most active among the dentists in the formation of this new department.

Knowing he was misleading some of the men in the University who were not familiar with the dental usages, practices, and methods, I after mature reflection felt it my duty to notify those who were to receive the honorary degrees, as well as the Chancellor of the University and members of the Council representing the Medical Department and several other members of the council, that such conferring of degrees was expressly prohibited in dentistry, and would certainly bar the recognition of this school by the National Association of Dental Faculties, without which recognition the college could have no standing outside of the State of New York.

According to the rules of this body an application for membership can be made only after one course of lectures has been given, and then must lie over one year before final action is taken. The University made application for membership last year at the annual meeting held in Chicago, at which time a protest against its reception was also received and filed. The matter came up for final action this month at Old Point Comfort. A few weeks ago I prepared what might be called a brief stating the facts and testimony in the case, explaining the whole situation as connected with the formation of the school. Copies of this were filed with the executive committee of the Association and sent to the dean of every dental college represented in the Association.

When I arrived at Old Point Comfort the morning of August 5, I learned that that brief, which was a mere skeleton of the facts in the case, had indeed been a skeleton in the closet of the champions of this school, for they were ready to revoke the honorary degrees and do any other thing the Association required them to do to obtain admission.

The unprecedented fact is that the school was admitted solely upon the plea for mercy of one who has contended against the manner of its foundation from the beginning.

The result is a vindication of the position taken by a majority of the accredited dentists of this city from the beginning. As soon as these honorary degrees were conferred, nearly every dental graduate in the city published a protest against the conferring of honorary degrees. The City Dental Association of 1892 called a special meeting and passed resolutions protesting vehemently against this practice of conferring honorary degrees, especially when it is done for the purpose of qualifying the recipients of the degrees to give instruction in the college which conferred them.

So firm has been my faith in the outcome of this contest that never for a moment, even under the most discouraging circumstances, have I doubted the result. I never have for a moment felt like charging on the University any fault in the matter. I took special pains in my remarks before the National Association of Dental Faculties to exonerate the Council of the University from any intention to do anything improper. I exonerated the active men in the Medical Department from any intentional disrespect to the National Association of Dental Faculties. They were ignorant of dental usages and precedents. They might have posted themselves, but unfortunately were guided by one who knew better than what he advised in this case, for he had actively taught, by voice and pen, better things. I charge here, as I charged before the National Association of Dental Faculties, and proved to their entire satisfaction so far as the representative of that school before that body was concerned, the dental department of the University of Buffalo was "conceived in sin and brought fourth in iniquity." None of the trouble would have come at all had honesty and uprightness governed all the parties connected with the formation of this school.

As it stands to-day the school is discredited as no other school has ever been before our highest educational body and is admitted to membership in a sense on probation only when those honorary degrees shall have been revoked. It certainly is the spirit of that body that whatever action is taken by the Council of the University revoking those degrees should be as open and public as the conferring of them, or as the numerous criticisms of the Association in the daily papers have been.

If, as reported, the Council met last week, and revoked those degrees, keeping the matter quiet, such action certainly was contrary to the spirit and temper of the National Association of Dental Faculties. The University will certainly promote the interest and welfare of the dental department if it courts the fullest publicity in the correcting of any errors which it may have been led into in the past."—*Buffalo Courier.*

PERSISTENT VITALITY.

The interest that has lately been created in the operations of replantation, transplantation, etc., has raised the question among dentists as to whether a tissue will survive after having been removed from its natural position and again replaced, or after having been removed, can it again be transplanted to another individual without suffering death ? And if so what time may elapse between the two operations ? And if it should be determined that such operations were possible what tissues are the most favorable to such operations? Or, in other words, and more briefly, is there such a thing as persistent vitality?

In surgical operations, just as in every other department of science, we are constantly meeting with surprises. What had been classed with the impossible yesterday is the practicable operation of to-day, and we are constantly being driven back to first principles to account for some unexpected results.

This subject involved the broad question, what are the conditions that produce death, and what conditions are required to support life? Can we lay down any law or rules that will hold good in all cases? At first we meet with so many seeming contradictions that we are discouraged in the attempt. We are prone to think that one form of life is something entirely different from another, and the rule that would apply to one will not apply to another. While we find, in general, that living organisms may exist only in an atmosphere or medium containing more or less free oxygen, someone comes along and tells you he knows of certain forms of life that can exist in an atmosphere of carbonic acid, drawing all its oxygen from its food. Another must have a medium of salt water; another must exist in fresh water; others still cannot be immersed in water but for a few moments without suffering death. Some organisms are able to withstand extreme changes of moisture or temperature. Some animal forms and also plants may be deprived entirely of their moisture—completely dried up, so that vital functions are entirely suspended until moisture is again restored. Some may be frozen in cakes of ice or raised to a temperature near the boiling point of water without any other effect than to suspend functional activity for the time being.

Among the more highly-specialized organisms the amputation of of a member or organ generally produces death in the parts so treated, or in the entire organism, owing to which organ or part is separated from the body. But in the more simple forms amputation of a part only produces a new animal. A remarkable example of this is found in the fresh-water hydra. This animal consists of a tube, one end of which is modified into a foot and the other is furnished with arms. The entire animal is of but one tissue. If an arm is amputated it immediately grows into a new hydra. The animal may be cut into several pieces, with the result of producing as many animals instead of death. One might think it was possessed of remarkably tenacity of life, but these animals are as easily killed as any. Turn the animal inside out, it immediately makes an effort to right itself. Should it fail, it dies. Deprive it of moisture and it dies.

Why should the cutting of an animal to pieces only have the effect of multiplication, and simply depriving it of moisture produce death? Exactly the reverse of some other plants or animals. The explanation is probably this: Its structure is that of large, delicate cells, very soft, which are easily broken up by desiccation, so that by depriving it of moisture its structure is destroyed; death is, of course, the result. Cutting it into pieces only multiplies because it is composed of but one tissue throughout, capable of performing the same functions. Hence, a piece, if separated from the balance of the animal, is not dependent upon it to perform any of the functions necessary to support life. Reversing destroys its life, because the cells on the inside of the tube are so modified as to perform the functions of assimilating food; while the outer cells are for the protection of the inner. When the animal is reversed neither of these sets of cells are in a position to perform their natural functions, therefore, death is the result.

Now, there are other plants and animals of which the reverse is true, which if deprived of their moisture simply remain inactive until the proper quantity of moisture is restored when they resume their normal functions. In their case the cell structure is a strong, firm tissue, which is not broken up by desiccation. Depriving the living matter or protoplasm within of its moisture is not a chemical but a physical change. Chemical action, oxidation, etc., goes on extremely slow, if at all, until the proper conditions are again restored for the performance of its natural functions. The living matter within the cells is a chemical compound, the exact chemical nature of which is not known but, its constituent elements are known. It is extremely unstable, being constantly acted upon by free oxygen, on the one hand, it must be constantly taking up the proper material on the other to preserve the equilibrium in its chemical nature. Its affinity for water is great and its activity depends upon the presence of water; the more water it is able to absorb, the more active it becomes. In the absence of that element activity ceases until moisture is restored, unless some chemical change takes place, when it is no longer protoplasm. As it does not form compounds with other substances, without losing its identity, differing in the least from itself in chemical nature, a living tissue is never attached to a dead one or to other substances. Hence, when a living tissue is found attached to another, supposed to be a dead one, it must be considered evidence that the tissue supposed to be dead is at least possessed of a low degree of vitality.

What has been said of protoplasm is true of it wherever found, for living matter is the same wherever found. The different modes of death cited above are due to the difference in the structure of the tissue it inhabits. Where the tissue is composed of firm, hard cell-walls it is much more able to endure desiccation. Where an organism is composed of a similar tissue throughout its entire body, separating it into pieces only multiplies it.

One of the present methods of skin-grafting, scraping the epithelial cells from the surface of the skin on to the part to be engrafted, is a case where a tissue, or cells of formed tissue, are engrafted on to another tissue, forming a union and a new tissue; transplanting.

Now, if a tissue can be transplanted from one place or location to another, some time must elapse between the two operations. It then becomes a quesion how long will a tissue endure between the two operations, and what tissues are most favorable to such operations? How long could the scrapings of epithelial cells be preserved before transplanting, or how much time might elapse between the operation of extracting and of transplanting a tooth? The evidence furnished by such operations is conclusive, that it is much greater than any of us have supposed. Bone may be grafted from one animal to another, or even chips of bones may be placed into the wound and a new tissue formed around it. (American Text-Book of Surgery.)

Why may not a tooth be successfully transplanted? Its structure is not changed by extracting, and decomposition is less likely to set in than in any other tissue of the body.

The above illustration may seem to be far-fetched, but not so. Much of what we have yet to learn in physiology must be drawn from the study of minute and simple formed organisms. The facts to which I have called your attention will show that death implies a chemical change, and without that there is no death.

It also shows that the tissues best suited to transplanting, replanting, etc., are hard, firm and simple structured tissues; like the skin, the teeth and bones. Those less suited for such operations are of delicate cell-walls and soft, loose structure, that will easily collapse when removed from its normal position, and by loss of moisture.

The success that has been met with in transplanting such tissues fully confirms the above conclusion.—Jacobs (F. O.) *Register.*

MODERN DENTISTRY.

When asked for a title to a solicited contribution I did not then know what I would write about, so I selected "Modern Dentistry," believing it to be a most comprehensive subject, affording great scope. Do not for a moment expect a long dissertation on the many additions and improvements to the dental science during the past twenty years. It should be considered presumptious in me (one of the old practitioners before the introduction of L. D. S.) to attempt to advance new ideas, or even lecture to the advanced graduates of modern colleges. Somewhat bewildered, I come in an inquisitive mood to speak on some of the modes of practice of the present. I do not wish to emulate the divers lecturers and writers of the day with sensational descriptions of extraordinary, wonderful discoveries and successful achievements of exceptional character. That gushing period has passed away from me. The hard, practical facts only remain. In the struggle for existence, increasing responsibilities necessitate the culmination of the superfluous and many modern adjuncts. One must adapt himself to his environment, and adopt a line of practice wherein he is most proficient and capable of giving conscientious value to his patients. Few of us become equally proficient in all branches of dentistry. Believing this, and being sufficiently employed otherwise, I have not tried the Land system of porcelain work, a most beautiful process. When properly performed by experts it is capable of embellishing as well as saving conspicuous defective teeth. The mixing of colors to produce imitation of natural shades is a work of art requiring special and continuous attention. I have not inserted teeth on what is called bridge work, believing that two or more roots should not be kept immovable by a rigid fastening which is irremovable. Although I have seen some nice work in that line, apparently giving satisfaction, still I have met some disastrous consequences when disease or mechanical fractures occur. I think all such work should be made so as to be removable at will by the wearer. I have never implanted teeth, having no faith in the system. Some appear to prove satisfactory, but many come to grief, and all are more or less a source of annoyance and trouble. To my mind the system is contrary to nature's laws, and will be tolerated only in exceptional cases. I do not cap exposed, bleeding or congested pulps, feeling safer to extirpate and fill root canals. A few accounts of horrible suffering, sometimes a demand made to have all the teeth removed to get relief, induced me some years past to eschew the practice. I have never tried the electric vibrator! I have still in my possession a forceps with a hole in the handle which was used, about thirty years ago, by my brother and myself for extracting teeth *without pain.* We wore a kid glove and attached a wire to a galvanic battery and let her go. It acted on the same principle as the method employed by French-Canadians to remove or abate pains caused by burns. They dip the painful part three times in boiling water. I tried the freezing appliance for a short season. Its effect was something similar. I have not used any of the numerous local anæsthetics advertised widely and extravagantly—some with high-sounding names, extracted from the Latin principally, others from the Greek and Hebrew. These names alone show considerable labor in research, and the numerous testimonials prove the article worthy of trial. But there are so many on the market that it is difficult to select one. Apart from the cost (which is an item), an old practitioner who has been successful in other ways, cannot afford the time. I do not use the electric mallet for filling. It is hard for me to acknowledge that I am growing old—therefore callous in the adoption of modern improvements; but my patients protested so much for a time against the use of the dental engine that I dread the introduction of more machinery. My sons may get it!

There are quite a number of dental appliances and medicinal preparations which I did not try, and which have proven useless. By being thus slow in adopting new things I have saved money, and my patients more or less torture. Most of my patients object to being experimented upon, and many continue to come through confidence in my old system of practice. I have never used nitrous oxide gas although I know it to be a good thing. I prefer sending patients who wish teeth extracted by its use to other dentists who employ it. In the case of patients desiring an anæsthetic, they or I procure physician who administers. I only operate. Perhaps my bump of caution is too large, and may prevent me from securing a wider practice, still I continue to make the sacrifice, and distribute that line of practice to the fearless or more confident. I once tried to make a plate for a cleft palate, but the girl died before the operation was completed. I have never tried another case since, patients presenting themselves being generally poor. I have been successful in some cases of complicated irregularities, one of the most successful occupying nearly a year in making and adjusting various appliances according to changes until perfected; was not fully paid for, the party leaving the limits forgetfully. In some cases, after expressing a desire to have their child's teeth regulated, and after the trouble of constructing one or more appliances, the indulgent parent gives way to the child's request to be relieved of the troublesome nuisance, and otherwise honorable people grumble at paying for services rendered. I have improved and made more symmetrical irregularities in adults' teeth by grinding and polishing. I have still a few patients of fourteen years of age and over who are themselves anxious to have their teeth straightened. In such cases I generally succeed. I have never inserted what is called a Richmond crown, or that mode of pivoting teeth with a gold band exposed on the labial surface. I have seen considerable irritation and inflammation with a strong tendency to permanent recession of the gum's margin, caused by the presence of gold bands pressed into the alveolar process. I prefer the Martin crown, where a gold band fits around the lingual part, and the mineral crown champered and fitted to root as a continuation of band, and not hammered in, but gently pressed to place. I inserted, a few days ago, a right lateral incisor, with gold backing, so as to regulate position, on a root slightly out of arch, for a citizen who has firmly fixed on the left central and lateral incisor roots, crowns—the old-fashioned pivot-holed mineral crowns, fastened with platinum pins, which I inserted fourteen years ago. For the same person I am crowning two bicuspid roots with gold. I believe the gold crown to be one of the most successful as well as useful additions to the dental art. For bicuspids and molars they are invaluable in restoring masticating surfaces, and also in being a complete protection and preservative of roots. But the use of them on cuspids and incisors I consider hideous in appearance. While visiting the Art Gallery at the World's Fair, my brother, who resides in Chicago, introduced me to a local dentist, who, in speaking, displayed three! No less! Three gold incisors! The effect was shocking to me! No doubt he used them as an advertisement, and advised his patients to have the same kind inserted. Well, everyone to his taste. Among the English and Canadian people, very few, if any, would approve of or even tolerate them. Accompanying the last circus which visited Ottawa was a man selling tickets. While extolling the wonders of the side show, he exposed to view a gold incisor, highly polished, which glittered in the lamplight, and seemed to make him proud of his adornment. By the way he twisted his mouth to better expose the glittering object, he no doubt imagined that he was causing envy amongst the supposed backward Canadians. It reminded me of a brass door-plate minus the inscription. I think that I can safely state that we

Canadian dentists endeavor to so closely imitate symmetrical natural organs as to deceive the eye, not only of the general public, but of intimate acquaintances. I felt a sense of pride when a patient asked an acquaintance who happened to come into my office, the question, "I have just had a tooth put in. Can you tell which it is?" The acquaintance, after closely scrutinizing, pointed to a natural tooth! We can do this conspicuous kind of work, but we do not recommend it, and we would endeavor to dissuade those who might ask for it. From the craze of having half a front tooth built up with gold it has come to this. I begin to think that there is some truth in the report that some Chicago dentist has inserted diamonds and rubies in teeth for ladies ! ! Modern art employed to imitate savage tastes! I immediately adopted the rubber dam and clamps, and consider them a boon to the profession. I approve of gold lining to vulcanite plates, also the addition of aluminum for strengthening and stiffening, admitting these plates to be made thinner. The gold plate, however, still holds supreme. The various makes of zinc cements are valuable acquisitions. The improved alloys for amalgams have enabled us to successfully save valuable teeth for people of moderate means. I have frequently seen teeth filled with the filings of a silver quarter doing good service after twenty-five years' use. If all teeth were of as good material and the elements of contact were no more injurious, we could hope to attain equal results with the cleaner material now used. There are many new medicines introduced for the treatment of abscess, etc. I have tried some with beneficial results. Others that are undoubtedly good but slow in action, I seldom use. I have discarded creosote completely, as I obtain better success with carbolic acids and oil of cloves. I still use tannic acid, seldom salicylic or iodoform, but I have added sulphuric acid, eugenic acid, oil of eucalyptus, peroxide of hydrogen, and tincture of iodine generally. It is unnecessary for me to enumerate the several medicines now in use for the treatment of diseased teeth. The fact that different treatment with different medicines proves equally successful is sufficient guarantee that the dental profession of to-day can cause to be retained in the mouth teeth that were invariably condemned and lost twenty-five years ago. The graduates of our college have generally a uniform system of treatment, which is a benefit, for one knows what to do with another's patient in case of need. The future dentist's manipulations and mode of treatment will become more and more identical, and as the teachings at dental colleges assimilate, so will the mode of treatment become general, and as soon as the old fossils drop off—some of them like barnacles clinging to and retarding the ship of progress —I say as soon as these and the ideas they stubbornly cling to have died out, the dental profession may become one universal system! If no other benefits were derived from dental colleges, this one fact should be sufficient to uphold their existence, and that is, a professional dignity is visibly extending, an ethical code of procedure is gradually developing, such as is taught in our college, and which seems to be strengthened by each graduating class. The result alone would be sufficient to raise each individual dentist in the estimation of the public. More harmony exists now than formerly among dentists in cities and towns, notwithstanding the continued increase in numbers. In Ottawa the Ontario code of ethics is, I believe, well adhered to, perhaps one or two exceptions where a specialty is announced, with professional card. The growing tendency is upward and onward. I believe the coming dentist will become a specialist in certain branches in which he is most proficient. The present large establishments where numbers of dentists are engaged will eventually disappear, as they somewhat mar professional dignity. Judging from advertisements embellished with pictures of the artists, they appear to represent factories instead of professional offices. In conclusion, I repeat that when the dental profession becomes composed entirely of graduates of recognized high grade colleges, they will stand the equal to the medical profession in fact, and will be so recognized by the public.—Martin (C. A.), *Dominion.*

EIGHT AND TWENTY—SOLDIERS ALL.

A visit to Springfield always appeals to my patriotic feelings, and I love to come here. It is the capitol city of our State. It was the home of Abraham Lincoln. On a green hill not far away is now his tomb, where "guarded by heroic bronze" our martyred hero lies.

Next to Mt. Vernon it is the Mecca of American patriotism; and I dare say many of you have the same impression which I had at first, that the society is now thirty years old. But I have learned that the count begins with the meeting of organization in July, 1865; so that the society is really twenty-nine years old, lacking two months.

This society was organized about one month after the last surrender at the close of the great civil conflict. In that conflict many of its earlier members had been engaged. How many I have never known until recently, and I think no one ever attempted an enumeration. Soon after I had joined the society, in 1880, I learned incidentally of several, and as the years went by I heard of others. Many of the facts which came to my knowledge from time to time were very interesting, and some of the personal experiences not merely interesting but thrilling!

It may seem to some of you a foolish sentiment, but I became possessed of a fascinating desire to learn the name and something of the history of every ex-soldier in this society. Then I said, why not make these things matters of record? I remember when the last old soldier of the Revolution died and was buried with great honors. The survivors of the war of 1812, according to the report of the commissioner of pensions for the year ending June 30, 1893, numbered eighty-six, who were paid $10,494.27.

There are thousands of persons to-day hunting for definite information with reference to deceased soldiers and unable to arrive at the facts as they might have been given by those men for themselves. So I began my work of investigation along this line, determined to get brief records of those who are living from themselves, and of those dead from their relatives. I presumed the list would not be a long one—comprising, perhaps, twelve or fifteen. But I had underestimated the number by about half, for instead of a mere dozen or so I have found twenty-eight, and I am not sure now that one or more have not been missed, either among the living or the dead.

Gentlemen, these friends of ours whom we have known perhaps only as brother dentists and instructors, were engaged in dangerous business this year thirty years ago. They were enduring hardships and trials of which we younger men know but little. They faced danger and death, capture and imprisonment, wounds and disease, with a courage and heroism which may have been equaled before but never surpassed. I am proud to devote a portion of this paper to short accounts of their service, and to ask you to place them upon record, as a part of the sacred heritage of this society. I only regret that I have been compelled to make them each so brief, for if the tales were fully told there would be enough to make more than one very interesting book.

I will consider their names in alphabetical order, and it so happens that the name which easily stands first among men of science in dentistry heads this list of our *soldier contingent:*

Greeene Vardiman Black, Jacksonville, Ill. It may not be generally known that before this society had an existence our honored member had begun his career of original investigation under the tutelage of Uncle Sam.

As a member of Company D, 129th Illinois Vols. he was ordered into the secret service and kept there till discharged in 1864. In charge of a few selected men it was his business to look for obscure signs, and trace out many lost and tangled threads. If a dangerous microbe, a regular pyogenic staphylococcus in the form of a *spy* was supposed to be within the lines, Uncle Sam had discovered that G. V. Black was just the one to trace him. He can tell you, if he will, many an interesting tale.

The line of investigation was very expensive, personally, to Dr. Black, as the following letter indicates :

. March 24, 1894.

DEAR DR. NEWKIRK :

Your letter asking where I was and what I was doing thirty years ago, *May* of this year, was received. In answer, I will say, without hunting up the records, that I was ill, at my father's house, I think in May. I had been in a hospital in Louisville, Ky., for about six months and was brought home in April. In the latter part of May I began to walk about and in the latter part of the summer I began practice in Jacksonville, having in the meantime been discharged from the army. Yours truly, G. V. BLACK.

Joseph Morton Blythe, Decatur, was 2d Lieut., Company A., 63d Indiana Vols. Elected February. 1882, age eighteen. Battle second Bull Run commanded company. Later, sick and in hospital. Went through Atlanta campaign under fire. Commissioned 1st Lieut. May, 1864. Next with Schofield following Gen. Hood. In battles of Franklin and Nashville, Tenn. Later, Anderson, Wilmington and Tower Creek, N. C. Mustered out July, 1865. He had been Blythe to enlist, and was no doubt blithe to resume the study of dentistry.

Samuel Alexander Campbell, Mattoon, Ill. Member of 76th Penn. Zouaves 1861 to 1863. Discharged on account of disability. Re-enlisted 1864, Company H., 151st Illinois Infantry, at Quincy, and served till February, 1866. Followed Sherman, and was with the force which captured Gen. Warford, 12,200 men, at Kingston, Ga., said to have been the last surrender of the war, June, 1865.

Dr. Campbell also paid dearly for his experience, marching three days and nights during an attack of the measles, which nearly cost him his life, and permanently injured his health.

Campbell is a good Scotch name, and belongs to fighting stock. Both of our Campbells were "coming" when the war broke out, but they came from opposite directions. The next gentleman of that name is

John Campbell, of Bloomington, who has the distinction of being our one and only ex-Confederate. He went into service in 1861, as 1st Lieut. of Company F, 22d West Virgina Reg., served one year as Lieutenant, was then elected Captain of same company. Served as such until the disbanding of the army in 1865. Was in fifteen battles, and about seventeen skirmishes. On the 19th October, 1864, was twice wounded; through the left shoulder and through the left hip; was disabled for six months or more. Returned to command, and was sent home. February, 1866, came to Bloomington, arriving with seventy-five cents. Graduated later at Missouri Dental College. Joined this society in 1875. Has practiced dentistry in Bloomington, on same corner, in the same rooms, for twenty years. It is nearly eighteen years since he gave me all the assistance he could in my first study of dentistry and I shall never forget his kindness.

Elijah Brown David, Aledo, Mercer Co., Company A., 30th Illinois Inf , August 12, 1861, to October 27, 1864. Battles : Belmont, Ft. Henry, Donelson, Siege of Corinth, Port Gibson, Raymond (Miss.), Jackson (twice), Champion's Hill, Siege of Vicksburg, Atlanta.

Made 2d Lieut. after Donelson, and later, Captain. Promoted for gallant service. Before Atlanta, July 22, the day Gen. McPherson was killed, went into action with 25 men; lost 6 killed, 5 wounded, 3 taken prisoners. Total 14. But he is with us yet, hale, hearty and wholesome.

M. S. Dean, one of our members, deceased 1861, a highly respected gentleman and scientist, translator of Magitot's work, *The Dental Follicle*, was quartermaster for a time of a Michigan regiment in Western service.

Daniel Bigelow Freeman, one of our Chicago friends, has in his office a fine collection of curious things, dental and miscellaneous, which every one of us ought to see. Among them are several bits of well-battered lead which were stopped in their swift career by his person, about thirty years ago down in Virginia. He was a member of Company G, 10th Vermont Inf., from August 4th, 1862, till May 31, 1865. (1st Brig. 2rd Div 6th A. C.) He was in battles of Locust Grove, The Wilderness, Bermuda Hundred, Cold Harbor, Petersburg, and Rheam's Station, also in that of Monocacy, which saved the City of Washington from capture. He was on the skirmish line, and one of a few who escaped at the hands of the Confederate sharpshooters.

After working on a farm during boyhood, and practicing dentistry nearly thirty years, he declares that experience on the skirmish line the hardest day's work he ever did. He had some very narrow escapes in the field, and ten months' experience of hospital life.

Isaac Austin Freeman, Chicago, a cousin of D. B. Freeman, had a brief, but interesting experience, as member of Company D, 1st Vermont Cav. During his first year under Gen. Banks, in the Shenandoah Valley, while his regiment was making a rapid charge at Mt. Johnson to save a bridge, by the falling of his horse he received an injury which unfitted him for service, and compelled his discharge. His injury, however, did not prevent his capturing a prisoner, whom he compelled to help him into camp.

While we are with the letter F, we must not forget one of our Illinois boys who crossed over to St. Louis, but has met with us so regularly that we count him almost an active member.

Albert Homer Fuller enlisted as a private in Company E, 118th Ill. Inf. Vols., August 4, 1862, was afterward appointed Commissary, then Quartermaster Sergeant, later commissioned 2d Lieut. of Company E of the same regiment. He was with his regiment from start to finish, serving in the departments of the Mississippi and Gulf. Was at the first attack on Chickasaw Bluffs, and at the battles of Arkansas Post, Champion's Hill, Thompson's Hill, Black River Bridge, Vicksburg, 18th and 22d May, Jackson, Grand Coteau, and other engagements. Was mustered out of the service at Spring Camp Butler, October 1, 1865. Was absent from the regiment and from duty but thirty days during the whole time.

Dr. Fuller had also two brothers, both dentists, in the service, one of whom died from pulmonary trouble, consequent on exposure, at siege of Fort Donelson; the other having been captured by Gen. Forrest, spent a year in Cahaba prison, Alabama, from which experience he has been an invalid ever since.

Most of you remember Dr. Hurtt, of Peoria, a faithful, active member for years, who removed to California for his health; now at Pomona, Cal., and a corresponding member.

John Milton Hurtt writes—"I made three enlistments, all at Columbus, Ohio, first in summer of 1861, 'Home Guards'; second, irregular, December 12, 1861, Company H, 46th Ohio; third, regular enlistment January 8, 1862, for three years, in 18th Regt. of Inf., U. S. A. (Regulars). I was assigned to Company A, 3rd Bat. of that regiment; my rank was sergeant.

The sieges and battles were : Siege of Corinth, Miss. Battles of Chaplin, Ky.; Stone River; Chickamauga; siege of Chattanooga, Tenn.; battles of Missionary Ridge; Hoover's Gap; Resaca, New

Hope Church; Kenesaw Mountain; Peach Tree Creek; siege of Atlanta and battle of Jonesboro.

I served with the regular brigade, 1st division, 14th army corps, from the time I arrived at Nashvile, next day after the fall of Fort Donelson, February 16, 1862, until discharged from Lookout Mountain, Tenn, January 8, 1865."

Dr. Hurtt's writing is wonderfully exact and neat. He once devised and made out a set of company records—the books twice took the premium over all competition, in the Army of the Cumberland.

As a specimen of his poetic descriptiveness I submit the following:

"The transcendent scenes of hundreds of camp fires lying at my feet, a sea of candles consumed in one evening at Graysville, Ga.: The cannonading of Kenesaw Mt., the battle of Hooker above the clouds (fog) at Lookout Mt., the movements of the two armies seen from Kenesaw, glistening arms, moving wagons, artillery and cavalry, flashing all colors in a brilliant morning sun, are some of the pleasing memories set over ag inst the mud, rain, cold, heat, dust and the horrible carnage of war."

I am sorry to say that Dr. Hurtt's health is now so poor that he is unable to practice. A kind word from some of you would be gratefully received at this time. Write to him.

Homer Judd. All the older and many of the younger members treasure the memory of the learned, genial and honest Dr. Judd. We knew him as an authority in scientific matters, as a member of the State Board, and stalwart defender of dentistry against all foes and detractors. We knew him as a friend and we mourned his taking off, but how many of us knew that Dr. Judd at the commencement of the war served as acting assistant Surgeon United States Army, on the hospital steamers and in the hospitals in the West? After the battle of Shiloh he was one of four surgeons charged with the care of five hundred wounded soldiers on board a hospital steamer. His health becoming impaired, he was compelled to visit Minnesota for rest and recreation. Subsequently he was appointed surgeon of the 40th Regiment Mo. Vol. and served with them at the battles of Franklin, Nashville and Spanish Fort. He remained in the service for some time after the war, being stationed at Huntsville, Ala. He was mustered out of service in the latter part of 1865, returned to St. Louis and entered upon the practice of dentistry. (A portrait of Dr. Judd may be found as frontispiece, Ill. Trans., 1891.)

Charles Ambrose Kitchen. The next in order is one who, like Wellington, "Stands four square to all the winds that blow," a modest gentleman with the modest, wholesome name of Kitchen.

Where was he and what was he doing a little more than thirty years ago? Chance if he ever told you anything about it. He was "making music for the boys" as a member of the Band, 33d Ill. Vol. Infy., a regiment raised at Normal and Bloomington, composed mostly of teachers and students and dubbed "The Brain Regiment." (Col. Hovey.)

Our friend Kitchen tramped with his command twice across Missouri and once through Arkansas, and was in at the severe battles of Fredrickton and Cotton Plant, Ark. A part of this time he was a meagerly supplied Kitchen, living on less than half rations. He was mustered out of the army in time to be mustered into the State Society at its organization, and he has not missed a meeting for twenty-eight years.

The next upon the list is the name of one possessed of such versatile ability that he might have achieved distinguished success, either as a journalist, lawyer, surgeon, soldier, or man of business, as he has in our profession. Before his name is announced you all know that I refer to

Col. Charles Rudolph Edward Koch, who enlisted August, 1862, as private in Company G, 72d Illinois Vol. Inf. (Chicago 1st Board of Trade Regiment). August, 1863, became 1st Sergeant in the 58th U. S. C. I. November 5, 1863, Captain 49th U. S. C. I. Participated in affairs of Clarkston, Mo, and Osceola, Ark.; Grant's Northern Mississippi campaign; Lake Providence and Yazoo Pass expeditions: Vicksburg campaign, including Champion Hill and assaults of May 19 and 22. Assisted in paroling prisoners. Participated in expedition to and capture of Natchez. Was here detatched to serve as chief clerk at headquarters of the district under Gens. Ransom and Gresham. Then as Aide to Adjt. Gen. Lorenzo Thomas, who was engaged largely in reconstruction work, and especially in protecting the interests of the freedmen. Rejoined command early in 1864 and participated in minor campaigns for protecting Uncle Sam's interests along the Mississippi Valley. May, 1865, assisted in capture of Yazoo City, of which he was made Provost Marshal. August, was ordered to Vicksburg to assume charge of Provost Marshal Dept. Western District of the Mississippi. Held this position under, and to the satisfacticn of three commanders, Gens. Maltby, Force and Osterhaus, till mustered out of service March 23, 1866. Considering the unlimited fnnctions and authority of his office, and the trying days of reconstruction, which required the exercise of the greatest circumspection and good judgment, his success in this difficult position reflected great honor upon himself, for we must remember he was not yet twenty-two years old. In April, 1866, he returned to Chicago and at once resumed the study and practice of his chosen profession—dentistry.

During the railroad riots of 1877 he became captain of a company of war veterans, who defended the southwest portion of the city for over a week against a turbulent mass of rioters. Organized Co. "I" 1st Infantry Ill. Nat. Guard immediately after, and was commissioned Captain of same August 19, 1877. Became Major of the regiment April 24, 1866; Lieut. Colonel, February 13, 1888, and Colonel, April 30, 1889. Resigned his commission November 1, 1893.

Reuben Neal Laurance. The initial "L" was represented by a man of clear grit, as those who have associated with him must know the best. I will let his story be told by his letter to me, which is a model of much in little :

LINCOLN, ILL., March 28, 1894.

Dear Dr. Newkirk: Yours received. Pardon delay. I had to look up old "muster roll" to get information. Originally entered service as private Company F, 38th Ill. Vol. Inf., at Atlanta, Ill., Aug. 16, 1861. *Promotions:* Corporal, Sergeant Major, 1st Lieut. Company F, and R. Q. M. 38th Reg. In actions: Siege of Corinth, May, 1862; Chaplin, Ky., October, 1862; Knob Gap, Tenn., December, 1862; severely *wounded* in face at Stone River, December. 1862; Liberty Gap, Tenn., June, 1863; wounded in thigh at Chicamaga, Ga., September, 1863; in Atlanta campaign, 1864; Franklin, Tenn., November, 1864; Nashville, December, 1864; *Mustered out March* 20, *1866, service four years and eight months.* I belonged to Sherman's army. It was mustered out in 1865. But I was kept in until 1866, on *staff duty in New Orleans and Texas with my command.* Yours truly,

R. N. LAURANCE.

The story is briefly told, but there are volumes between the lines.

Not to be outdone by the Ks, our friend.

Iverson Allen Lumpkin, of Mattoon, comes forward to make two of the Ls. He was a volunteer under Caleb Jackson, Missouri State troops, served only four months, but saw enough of war to satisfy his curiosity in the battles of Boonville, Carthage and Wilson's Creek.

J. Frank Mariner. As we might expect to find, the letter M was well represented. It stands for military, Mariner, Matteson and Matthews. J. Frank, "our Mariner," took a horse for his ship and sailed through the South land as a member of Co. L, 15th Ill. Cavalry. Enlisting as a private, he came home for a Major. He was at Ft. Henry, Donelson, Pittsburg Landing, Siege of Corinth, Farminton and Siege of Vicksburg; afterward a 1st Lieut. in command of company, acted as escort successively for Gens. Grant, Halleck and Dodge. This Mariner of ours, so modest, and almost timid of speech in the meetings of this society, can tell you, if he will, of the dangerous exploits and dashing charges that will quicken your pulse and stir your blood. Next comes

Charles Franklin Matteson, who enlisted at Galesburg, Company E, 117th Ill., April 19, 1861. Transferred October 2, 1862, to Company G, 103d Ill., 1st Lieut., soon afterward Captain, in Army of the Tennessee. Was in thirty-two battles, among them Donelson, Shiloh, Corinth, Vicksburg, Jackson, Lookout Mountain, Atlanta campaign and March to the Sea. Company E was color company at Shiloh; with thirty-two men, lost nineteen. 1864, at Savannah, C. F. Matteson was detailed as Asst. Quartermaster 15th A. C. in charge of 1,000 to 5,000 men, handling all stores for the corps, serving here until March, 1865; Moorehead City till May 9. Rejoined command at Washington. Mustered out at Louisville, June 21, and *paid off at Chicago*, July 9.

A. E. Matteson, younger brother of C. F., enlisted as a member of the band, 26th Ill. Inf. Saw service at New Madrid, Siege of Corinth, Island No. 10 and Farmington. Acted as volunteer aid to Gen. Thomas at battle of Nashville.

Rudolph Matthews, now of Wichita, Kansas, formerly a member ber of this society, resident of Pontiac, where for nine years he was associated with Dr. Townsend, is also an ex-soldier of Illinois.

Enlisted at Oquawka, Ill , July 28, 1862, Company G, 84th Vol. Infty. Discharged June 8, 1865, at Nashville, Tenn. (3d Brig., 1st Div., 4th A. C.) Was detailed as company clerk and adjutant's clerk, and was with his regiment in all its marches and battles, except for a short time when he was in hospital at Louisville. The regiment was in battles of Chickamauga, Lookout Mountain, Missionary Ridge, Ringgold, Resaca, Atlanta, Jonesboro, Nashville, and Franklin.

It grieves me to state that neither "N" nor "O" has a representative in the list, but we are in a measure consoled by the record of our *Quaker friend from Whitehall,*

Thomas Western Prichett, He says in answer to my queries :

"Student of Uncle Sam—1862, class 71 Sec. G, (91st Reg. Ill. Inf., Com. G). Three years' course. Graduated July 12, 1865. High private, (6 ft.) *Brevet corporal.* Pension *not* applied for. May 8, 1864, was at Brownsville, Texas.

Ever yours,

T. W. PRICHET."

I happen to know that between these quaint lines you may read, if you will, the record of a most arduous service by one of the most faithful of men, Besides purely military service, he endured at Brownsville and on Brazos Island, Texas, cliamatic and dietetic hardships which nearly cost him his life.

I have but recently been informed that our member from Belleville, a man justly celebrated for original research and scientific attainments,

John Joseph Ravenscroft Patrick, in addition to his many other honors bears those of the military. He served with Co. G, 130th Reg. Ill. Vols., from the mustering in thereof October 25, 1862, till January, 1864. From January 23, 1863, to February 10, 1864, he was captain of his company, and participated in the Vicksburg campaign, and from Miliken's Bend, through battles of Port Gibson, Champion's Hill, Black River Bridge, and charges of May 22 and 23. After surrender of Vicksburg, regiment assisted in ten days' siege at Jackson, Miss., resulting in capture. Returned to Vicksburg, was transferred to army of the Gulf, under Gen. Banks; went via New Orleans to Texas, where Capt. Patrick resigned because of poor and failing health. His resignation at this time was fortunate, for he just escaped the ill-fated Red River expedition, wherein almost the entire number of the regiment were taken prisoners and kept at Tyler, Texas, thirteen months, suffering great privations.

Mark H. Patten, who was a member of this society many years, belonged to the military list, having served from July, 1862, till the close of the war—first 100 days in Company F,. 71st Ill. Inf., afterward in Company C, 10th Ill. Cav. A part of this time he was in the United States army mail service, delivering to the boys their aniously looked for "letters from home."

With "R" we meet a royal man from Carthage—one with a plural name and a heart big enough for two.

E. M. Robbins, Private in Company H, 78th Ill. Vol. Inf., enlisted July, 1862; was always in the front, participating in the battles of Chickamauga, Mission Ridge, Sweet Water, and all the principal battles of the Atlanta campaign. With Sherman to the Sea, thence from Savannah to Goldsborough and Rolla, where Johnson surrendered, thence onward through Richmond to Washington, where he was one in the grand review and mustered out—all for $13 a month, in depreciated currency, the last of which was received in Chicago in June, 1865. There'll be a pension in heaven for all such men.

The initial "S" has four representatives on our list. In 1863, there was living in Pennsylvania, a boy named

George D. Sitherwood. He enlisted first for ninety days in an independent regiment of cavalry—State guards—and served as bugler. Enlisted later in Signal Corps, U. S. A., at Indiana, Pa., for five years. Sent to Signal Camp of Instruction at Georgetown. Again served as bugler. Was on the skirmish line at Fort Stevens, when capture of Washington was threatened by Gen. Early. February, 1865, transferred to Hilton Head, and later to Fort Pulaski, near Savannah, Ga. Station flagged the news of the capture of Jefferson Davis, telegraph lines being cut. Honorably discharged August 12, 1865.

"S" is a musical letter, and while our friend Sitherwood was rousing the echoes of the Pennsylvania and Virginia hills with his bugle,

Gilman T. Smith was inspiring the boys of the 47th Ill. Vol. Inf. with the stirring notes of a 1st B cornet. Remained one year in service, till all regimental bands were mustered out. Is now in command of Ferris Post 309, G. A. R.

Ezra Hazen Stewart, Joliet, has written me this brief account of his service:

JOLIET, ILL., March 27, 1894.

Dr. Garrett Newkirk, Chicago, Ill.

Dear Sir:—In reply to yours of the 23d inst. would say that I do not think that my experience in the army was different from most people, unless I was most frightened in the first action than generally falls to the lot of man. I enlisted in Company H, 4th Vermont Inf., September 2, 1861; served under McClellan through the "Peninsula Campaign," and participated in most of the actions, more particularly Lee's Mills, Williamsburg, Savage Station, etc. Am happy to state that I returned with my bones in fair condition.

Yours truly,

E. H. STEWART.

Dr. Stewart was evidently a young man of courage, for he has the courage now to tell the truth about his first battle. He probably tried to conceal his feelings, and every other man in the regiment did the same.

The next to mention is a veteran of war, and a veteran tried and true of this society. If we were asked to describe his character in a single word, it would be *faithfulness;* for he has never been known to swerve from the line of duty or fail in the performanee of whatever he had undertaken. You all know that I refer to

Col. Edgar Denman Swain. In June, 1861, he organized at Batavia, Ill., Company I, 42d Regt. Ill. Vol. Inf., mustered in July 22, and chosen Captain September 21, marched to Benton Barracks, St. Louis. October 18 to December 13, took part in Fremont's campaign to Springfield, Mo. Winter quarters at Smithon, Mo. February 3, left under orders for Fort Donelson. Marched to Cairo, thence to Columbus, Ky., March 4, Island Number Ten; March 15, on its surrender was detailed with company to take captured officers to Cairo, captured steamer "Admiral." Took part in Mississippi River campaign to Ft. Pillow. Joined Gen. Pope, engaged in Siege of Corinth and battle of Farmington. Joined Buell at Nashuille. Entered on Murfreesboro campaign December 26, including battle of Stone River. Took part in campaign under Rosecrans, which ended in being besieged at Chattanooga. Siege broken by battles of Lookout Mountain and Mission Ridge, with expedition to relieve Burnside, at Knoxville. January 1, 1864, Company re-enlisted as veterans. After furlough joined Sherman's army for campaign to Atlanta. Part of force under Gen. Thomas against Hood. After Hood's defeat, followed his broken army to Tennessee River. Returned to Nashville. From there went, via Tennessee and Mississippi Rivers and New Orleans, to Port Lanasa, Texas, arriving July 23. Camped upon Placida Creek, same camping ground used by Col. Jefferson Davis, with his Mississippi regiment en route to Mexico, in 1846. July 15, 1865, was ordered by Gen. D. S. Stanley to assume command of 3d brigade, 2d Div., 4th A. C. Retained this command till his own regiment received orders to be mustered out. Asked to be relieved of brigade command to accompany regiment home. Mustered out at Springfield, Ill., having served four years, seven months; retiring as full Colonel of his regiment by commission. Breveted Colonel of U. S. Vols by U. S. Senate, March 13, 1866, for meritorious service.

Joined 1st Regiment Ill. National Guards March, 1877; served as Major and Lieut. Col. through the period of railroad riots same year. Commissioned Colonel and left the service of the State five years later.

Colonel Swain was wounded in the knee by a bullet during the

Atlanta campaign, but kept at the head of his command, the "boys" lifting him to and from his horse.

Samuel Coleman Wilson was an honored member of this society, living at Bloomington; died June 27, 1881. I have been able to learn only the following particulars of his earlier life: He was 1st Lieut. of Company F, 168th New York Vol. Inf., was in second battle of Bull Run, 1863. Suffered sunstroke while in service, from the effects of which he never recovered, his death having been, as it was believed by physicians, traceable to this cause.

In tracing out the records and history of the various members of our military contingent, I have found it true, that scarcely a man went through the service without some sort of injury aside from wounds, as the result of hardship and exposure. It is not surprising that this should be so, when we consider all that is involved in a soldier's life.

Our list closes with the name of

Walter Benjamin Woodward, formerly of Peoria, now of San Diego, Cal., formerly an active, now a corresponding member of this society. At the age of eighteen he enlisted from Jacksonville, Ill,, College, in Company C, 145th Ill. Vols., a company raised by Prof. Crampton, of the College. This was near the close of the war, May 19, 1864. The enlistment was one hundred days, and the regiment was discharged in a little more than four months—September 23, '64, after having done garrison duty at Rolla, Mo., and Alton, Ill.

The United States has reason, I think, to be proud of the conduct generally of her citizen soldiers north and south at the close of the war.

Never in the history of the world had there been such a sudden and general disarmament in any country, and the quiet return of so many men from the highways of war to the pleasant path of peace.

Our "boys" returned at once to the dental offices and soon enlisted in the ranks of this and other societies. In fact some of them were, at the very start, in Illinois, and have never wavered in the line of march to this day.—Newkirk (G), *Review.*

THE USE OF PROPER TERMS.

If dentistry is a professional pursuit, dental services cannot correctly be designated as "doing a *job* of dental work." If the pericementum exists on the root of a tooth the cementum is nourished—a pulpless tooth therefore is not a "dead" tooth. Dead teeth do not remain in the mouth—they are cast off as foreign matter. The first permanent molar does not always erupt at six years of age, nor the second at twelve years—they are therefore not properly called "sixth" year, or "twelfth" year molars. The cuspid teeth have little connection with the eyes, with dogs, or with the tissues lying immediately beneath the diaphragm—there is little logic, then, in calling them "eye" teeth, "canine" teeth, or "stomach" teeth. The third molar—more's the pity—does not always make its possessor wise; then why not discard the term "wisdom" tooth? An alevolar abscess has little in common with an ulcer—why say "ulcerated" tooth? There are few fillings composed entirely of silver—why should we call an amalgam filling a "silver' filling?

The list might be almost indefinitely prolonged, but the foregoing illustrations are sufficient to show the tenor of our argument, which is, that the profession should be more careful in its use of terms and phrases. Old ideas are fast passing away and old terms—especially such as are improper, misleading or ridiculous—should be allowed to pass away with them. The profession—at least the larger part of it—are exceedingly lax in the use of terms and phrases, and while we are not at this time urging the acceptance of any one system of nomenclature we make a plea for the suppression of all terms so manifestly obsolete as some of these we have just quoted. Too many of them are yet creeping into our literature, many more are killed on their passage from the written page to the printed page, and when we come to the ordinary conversation among the rank and file of the profession we find it filled to the spilling point with these fossilized absurdities. It requires only a little discipline on the part of our writers and speakers to remedy this evil. It is time the evil was remedied.—*Review.*

THE DENTAL DEPARTMENT OF THE UNIVERSITY OF BUFFALO.*

So many mis-statements have been made concerning the Buffalo school, and the action of those connected with it has been so misunderstood, that it has been deemed advisable that a plain statement of all the facts connected with its organization should be made, not through secular newspapers, or by any unprofessional methods, but in a journal devoted to dentistry and the dental profession. The Faculty of the school have tried to keep within professional lines, and to avoid any personal controversies, and do not now propose to do or say anything unbecoming professional men. But justice to those whose good names have been assailed, and whose motives and actions have been so misjudged, demands that the plain truth should be told. Let it be understood that before its publication this statement has been submitted to those whose names are employed, and that they pronounce it accurate so far as their own personal knowledge extends.

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* From Advance Sheets.

It is a matter of history that no dental college has been organized in any city during modern times, without more or less of local opposition, and too often of factional bitterness which has degenerated into personal malice and vindictiveness. It is not very much to our professional credit that this should be the case, but professional jealousies exist almost everywhere. Many cannot view with any degree of complacency what might appear like the advancement of another, and this spirit has too often defeated worthy undertakings.

The Buffalo Dental College is not a thing of yesterday. Forty years ago the late Dr. George E. Hayes contemplated the establishment of such a school. Twenty-six years ago the editor of this journal was one of the committee to whom was referred the question of the propriety of its immediate organization as a department of the University of Buffalo. It has always been the desire of the Council of the University that it should be opened, that all the different branches of medical science might be taught within its walls. More than seven years ago the editor of this journal received the following communication:

"BUFFALO, N. Y., May 12, 1887.

Dr. W. C. Barrett:

We, the undersigned, teachers in the University of Buffalo, desirous of seeing its sphere of usefulness extended, and feeling that the times are ripe for the establishment of a Dental School in this section of the country, realizing moreover the important relations existing between denistry and medicine, and looking to yourself as the suitable person to undertake the task of organization, would hereby request you to sound the sentiment of your professional associates, and, if possible, endeavor to unite them with us by the establishment of a Dental Department in said University, in which endeavor we pledge our individual and united co-operation."

This was signed by every professor and teacher in the University, except the one to whom it was addressed, for he was then as now a teacher in the Medical Department, which doubtless was the principle reason why he was called upon. The communication was quietly pigeon-holed for nearly five years, no action whatever being taken by the one to whom it was addressed. At the end of that time the University had determined to erect new, elegant and commodious buildings, so that the excuse could no longer be urged that there was no room for another department.

The next step is detailed in the following letter from Professor Roswell Park, the well-known surgeon, a communication written after opposition to the school had been developed, and at the request of the one to whom it was addressed:

"BUFFALO, N. Y., June 11, 1892.

Dear Dr. Barrett:

In reply to your letter, I wish to say that for a considerable number of years the University of Buffalo has contemplated organizing a department of dentistry, and would have done so long ago had it had accommodations to offer. When it contemplated new buildings, the architect was directed to provide space for it. After the plans were drawn, I requested you, you will remember, to inspect them. You then asked if we had definitely decided to open such a school, and I replied that it had been decided now so to do, and that we very much desired the co-operation of yourself and all the dentists in Buffalo, but, if this were refused, or if they opposed it, the sooner we knew it the better, in which case we should secure what help we needed from abroad, distasteful as such a step would be. We were fully convinced that there was talent and teaching ability enough in this city to conduct a *good* school successfully, and we contemplated seeking it elsewhere only in case of discouragement at home.

You then agreed to lay the matter before the dentists of Buffalo, and we have since then relied on local assurances given us. So far as I know, our only misunderstanding has been that we did not realize that you felt any interest in a scheme that seemed smouldering. You have now the heartiest backing which the Council and the Medical Faculty can give, and you may assure any and all that the new Dental School will be established—nay, is established—in spite of all short-sighted opposition.

I have meant in this letter to state the substance of interviews held with you long ago, and to reassure you of our active co-operation now. It is a matter of deep regret, but not of the slightest dismay or discouragement, that some of your dental brethren have seen fit at the outset to say and do things which show anything but a fraternal spirit. But I believe that no college was ever started without something of that kind. Sincerely yours,

ROSWELL PARK."

Immediately after the interview mentioned in the first part of the preceding letter, Dr. Barrett sought an interview with three or four of the oldest and most prominent dentists in the city, and submitted to them the facts, and asked their opinion whether, as a Dental Department was a foregone conclusion, it was not the bounden duty of Buffalo dentists to give the scheme their support, and endeavor to secure the best college possible, rather than to see men from outside come into our city and perhaps organize a school that might not be a credit to us. All were of the opinion that our duty was plain, and that it was advisable to call together the dentists of the city and lay the matter before them. This was accordingly done, and at that meeting, after due discussion, a motion was made that in the opinion of those present, including nearly all the dentists of the city who were connected with any dental society, it was advisable now to organize a Dental Department of the University of Buffalo. A committee of five was appointed, with power to act, consisting of Drs. Barrett, Southwick, Straight, Snow and Freeman. The committee met, and after earnest discussion could not devise any manner in which the necessary money could be raised for the establishment of the school, the University itself having exhausted every dollar of its funds in building. Finally the matter was, upon vote, referred to Drs. Barrett and Southwick, as a subcommittee, with power to act, and to organize the school if they could secure the necessary funds

The sub-committee met with the Chancellor and a committee of the Council, and received their pledge to co-operate to the extent of their ability, and obtained their advice as to the course to be pursued. They also met with a committee from the Medical Faculty, headed by its Dean, and laid before them a plan of action in which they proposed to ask for subscriptions to stock in the college, each subscriber to have a voice in its management. They were immediately informed by the committee that the scheme was impracticable and impossible, for two reasons. In the first place, every dollar invested must become the property of the University, and its title rest in the Council. Hence there would be nothing on which to base any issue of stock. This was a disagreeable surprise, and was nearly the death of the enterprise. The other reason for the impracticability of the scheme was that the department must be organized in the same manner as the other departments, and, as with them, the management must rest in a governing board, which should not consist of over five persons. These would be appointed by the Council, and would be held responsible for the proper conduct of the school, they being removable for cause at any time. They were told there was no other possible way in which the department could be organized. The sub-committee urged that unless all were appointed by the same authority, it might cause dissatisfaction and dissention. They were assured by the Medical Committee that if they expected to have entire unanimity among all the members of the profession in a city of the size of Buffalo, they would find themselves much mistaken; that the only way was to go ahead, select such men as were best qualified, and proceed with the organization. They were warned that unless they did this, they would encounter yet greater difficulties, and the result has proved the accuracy of the prediction.

The sub-committee finally reluctantly agreed to the appointment of a governing board of five members, and they were selected, this board to assume all the financial responsibility. One of those named subsequently refused to take the position, because he declined to become financially responsible for a considerable sum, the repayment of which then appeared extremely problematic. The names of the other four were sent to the Council and duly appointed.

From that time commenced the disagreements. The sub-committee called a meeting of the original General Committee, but two of the members persistently refused to attend, although they were strongly urged to come and hear the report of the sub-committee, who, they were informed, had proceeded on the only possible plan, and had constantly acted under the advice of the Medical Faculty and the Council. But the majority of the committee ratified the action, and a Faculty was named, equipments purchased, and the rooms fitted up at the expense of the members of the Governing Board. From that time a number of dentists who were not appointed on the Governing Board, with some who had no claim to such a position, have been unceasing in their opposition. Doubtless they felt that it was a grievous wrong that they were not named instead of others, but the number to be chosen was necessarily very limited, and the Council appointed those whom it desired. It could not be otherwise, whatever individual wishes might be. This difference of opinion has been a matter of great regret to those connected with the school, for they strongly desired the co-operation of their brethren, with whom they had always lived in peace and fraternal unity. But they knew that they were in the path of manifest duty, and they patiently submitted to the wrong that they felt was done them in the censure and upbraiding of their brethren, consoling themselves with the knowledge that at some day in the future, when it became known that they took the only possible course open to them, they must be fully exonerated.

The college has constantly flourished, and the number of students making application for entrance has been as great a surprise to the teachers as it could be to any one. The members of the Governing Board and of the Faculty could have no unworthy or selfish ambition. There was no immediate expectation of a reimbursement of the money expended, to say nothing of remuneration for services rendered. The position of most of them was already assured, and they had nothing to gain. The senior member of the Faculty was already a professor in one of the first dental colleges of the world, and his heart was warmly interested in that Chicago school. But as he had always felt and manifested an interest in everything that pertained to the welfare of his profession, he could not consistently refuse a part in so important a professional undertaking as was this, located in his own city.

The members of the Examining Board of the State Dental Society were appointed Curators of the school, and their approval made necessary to the graduation of students. They attended the first commencement exercises, examined the graduating class, and at the next meeting of the State Society earnestly recommended the school for formal recognition. This was opposed by the local dentists who were not in sympathy, the matter was fairly tried, and by an overwhelming vote the school was approved.

The college made application to the National Association of Dental Faculties for admission. When the time for election came, it was opposed by some who had an interest in its exclusion, and by others who had been prejudiced by the misstatements made. The only charge that could be brought against it was, that upon the recommendation of the Medical Department, before the organization of the Dental Department; honorary degrees had been conferred upon two men, concerning whose standing and worthiness not even the bitterest opponents of the school could urge anything. One of them was one of the founders of the State Dental Society, and had been the President of the Board of Censors, the State dental examining board, for many years.

The National Association of Faculties had passed a resolution that no honorary degree should be granted by any of its members without the consent of all. But when the honorary degrees were granted by the University of Buffalo it had no Dental Department, and consequently could not be amenable to the regulations. But, nevertheless, it was proposed to submit the matter to the Association and abide by its decision. Accordingly it made no answer to its enemies, bnt its representative, at the proper time, submitted to the

Executive Committee of the Association, to which is referred all such matters, the following verified statement :

"BUFFALO, N. Y., July 15, 1894.

Prof. W. C. Barrett:

In reply to your request, we gladly state the exact circumstances under which the honorary degree of Doctor of Dental Surgery was conferred upon A. P. Southwick, M. D. S., and F. E. Howard, M. D. S., of this city, by the University of Buffalo.

When the new University building was determined upon, the Council decided to complete a step which it had long contemplated, in the organization of a Dental Department. To signalize the event, to mark its high appreciation of the great professional advancement which dentistry had made, to demonstrate to the dental profession its warm professional feeling, and as a pledge of its hearty co-operation, the Medical Department formally requested the Council to vote, and the Chancellor to confer upon certain men concerning whose qualifications there could be no question, the honorary degree of Doctor of Dental Surgery, the charter of the University empowering it to confer that, or any other recognized degree. This was accordingly done, without any suggestion from, and before the organization of, the Dental Department.

The University deeply regrets that this simple act of professional courtesy and homage, intended as an honor, not alone to the gentlemen selected, but to the dental profession of the country as well, should have been misinterpreted and misconstrued, and that an attempt has been made to use it to the prejudice of the men so honored, and to the injury of the Dental Department of the University. Had the Council for an instant supposed that this act of fraternal regard and professional courtesy could have been criticised, or that it could in any way have offended the susceptibilities of any part of the dental profession, it might, and would have chosen some other method of manifesting its respect, and of conferring distinction upon those whom it considered representative men in dentistry.

E. C. SPRAGUE,
Chancellor.
F. M. HOLLISTER,
Secretary of Council.
MATTHEW D. MANN, M. D.,
Chancellor.
JOHN PARMENTER,
Secretary of Medical Department."

"Since my name has been used in a communication sent to the members of the National Association of Dental Faculties, I wish most heartily to endorse the above, and emphatically to deny the essential statements contained in that communication, as well as to express my condemnation of the generally unprofessional and undignified course pursued by its author throughout the whole controversy.

Roswell Park, M. D.,
Professor of Surgery."

This communication, with one of approval from the Secretary of the Board of Regents of the University of the State of New York, and another from the State Dental Examining Board, was submitted to the Executive Committee of the National Association of Dental Faculties, and their decision was asked, the school agreeing to abide by it, although one of the members was its principal opponent, while sitting as its judge. The decision was that the committee could not recommend it so long as those degrees were in existence, at the same time saying that in every other respect the college was regular, reputable and commendable. The degress were therefore resigned by their recipients, revoked by the Council of the University, and the instrument of revocation filed with the Secretary of the Faculties Association, when it was admitted to full membership.

The Buffalo University still believes that, under the circumstances, it was not amenable to the Faculties Association, and that the degrees were regularly and reputably conferred, but the Dental Department, feeling that it wished to be in harmony with its colaborers, preferred to yield the point, that it might not by any prejudices be hampered in the work which it proposed to do in assisting to raise the professional standard, and it rests content with the outcome of the whole matter.

The department has felt that in justice to itself it must make this statement, necessarily a long one, that its students, and the profession in its vicinity especially, might know the exact facts concerning a difficulty which it has deeply regretted, but which it had not the power to avert. The Faculty has waited until the school was thoroughly and successfully established before it made any public statement, believing that it was neither professional, dignified nor proper to do so before. They have felt like Nehemiah of old, and when the modern Sanballats have endeavored to obstruct their work, they have desired to answer with him, "We are doing a great work, so that we cannot come down; why should the work cease, whilst we leave it and come down to you?" Editorial, *Practitioner and Advertiser.*

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The thirteenth annual meeting of the National Association of Dental Examiners was held at Old Point Comfort, Tuesday, August 7, Dr. Hurlbut presiding. In the absence of the secretary, Dr. Meeker was appointed secretary *pro tem.*

The following state boards were represented :

Alabama—T. B. Whitby.
Delaware—D. M. Hitch, C. R. Jefferis.
District of Columbia—H. B. Noble, Wms. Donnally.
Georgia—B. H. Catching.
Illinois—L. L. Davis.
Iowa—J. T. Abbott.
Kansas—L. C. Wasson.
Kentucky—C. G. Edwards.
Massachusetts—J. Searle Hurlbut.
New Jersey—F. C Barlow, Chas. A. Meeker.
North Carolina—V. E Turner.
Pennsylvania—W. E. Magill, Louis Jack, L. Ashley Faught.
Tennessee—J. Y. Crawford.
Virginia—J. Hall Moore, E. P. Beadles.

The secretary read a communication from the Board of Examiners of the State of Minnesota, insisting that their resignation, tendered in 1892, should be accepted. On motion of Dr. Edward, the resignation was accepted.

An application for membership from the Board of Examiners of the State of Oregon was received, and the secretary instructed to answer the same.

On motion of Dr. Barlow, the secretary was instructed to have the constitution, by-laws, and standing resolutions to date printed in pamphlet form and sent to all members of the association.

On motion of Dr. Jack, the secretary was instructed to have the proceedings of the association at its meetings of 1893–4 printed in one pamphlet.

The secretary read a memorial from the Examining Boards of New York, New Jersey, Delaware, Rhode Island, Connecticut, Pennsylvania and the District of Columbia, regarding the necessity of uniformity in standards of examinations in different siates, which with the following resolution on the same subject, laid over last year, was referred to a committee consisting of Drs. Faught, Crawford and Catching :

Resolved, That it is the sense of the National Association of Dental Examiners, that when a member of the dental profession presents a certificate of registration from a State Board of Dental Examiners, duly created by law, that the same should entitle the holder of such certificate to registration without an additional examination in any State of the Union having a law to regulate the practice of dentistry. *Provided*, such certificate was obtained on examination.

The committee subsequently reported, recommending the adoption of the memorial as expressing the sense of the association.

The report was adopted, a verbal amendment to the memorial offered by Dr. Donnally being accepted, making it read as follows:

TO THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS:

Gentlemen,—Delegates from the Examining Boards of New York, New Jersey, Delaware, Rhode Island, District of Columbia, Pennsylvania and Connecticut, in conference assembled, respectfully offer for your consideration the opinion that ours is an advancing profession, our watchword is progress, and we ask that your influence shall be actively directed to secure thorough preliminary examinations in every dental college in every State.

We think the true interests of our profession demand such uniformity in standards of examinations as can be obtained by State Boards, always striving after higher and better attainments, and with a view to ultimately bring about a safe, judicious, and fair reception of certificates from State Bords of other States.

It is our opinion that it would be most desirable that a law whose provisions should be uniform, yet whose phraseology might be different, so as to suit differences of environment in the various States, should be enacted in all the States at once; but if such a law were enacted in half a dozen leading States, other States would gradually fall into line and adopt similar ones.

We are in favor of bringing responsibility for defective education as directly as possible upon the offending school, with a view to making every diploma real and reliable evidence as regards the holder's ability and proficiency. Therefore we will use our influence as practioners, as well as members of Examining Boards, to obtain the selection, by competent authority, in each State, of an independent body, disconnected from the institutions which educate, with sole authority to grant licenses and admit to practice.

G. CARLETON BROWN, *Secretary.*

The Committe on Colleges reported that there are now twenty-eight recognized and fifteen unrecognized colleges; that there have been no additions to the accepted schools.

The chairman, Dr. Jack, read the following report of the numbers of matriculates and graduates at the following schools :

RECOGNIZED SCHOOLS.—1894.	FRESHMEN.	JUNIORS.	SENIORS.	GRADUATES.	POST-GRADUATES.
1. Baltimore College of Dent. Surg., Md.	47	45	40	37	
2. Boston Dental College, Mass. . . .	55	58	35	33	
3. Chicago College of Dental Surgery, Ill.	127	116	69	58	28
4. College of Dentistry, Department of Menicine, University of Minnesota	23	12	6	6	
5. Dental Department Columbian University, D. C.	12	19	8	8	1
6. Dental Dept. National University, D. C.	6	9	8	8	
7. Northwestern Uni'sty Dent. School, Ill.	33	36	25	24	6
8. Dental Department Southern Medical College, Ga.*					
9. Dental Department University of Tenn.	16	12	12	10	
10. Dental Dept. Harvard University, Mass.	31	14	18	14	
11. Indlana Dental College, Ind. . . .	29	32	23	23	
12. Kansas City Dental College, Mo. . .	54	36	18	16	
13. Louisville College of Dentistry, Ky. .	54	27	10	9	
14. Missouri Dental College	51	31	21	21	
15. New York College of Dentistry . . .	111	92	81	62	1
16. Northwestern College of Dental Surgery, Ill.	32	36	25	24	
17. Ohio College of Dental Surgery . . .	57	57	34	34	
18. Pennsylvania College of Dental Surgery	100	80	63	62	
19. Philadelphia Dental College	93	107	78	77	
20. School of Dentistry of Meharry Medical Dept. of Central Tenn. College	4	3	3	3	
21. Dental Dept. University of California	68	45	18	18	
22. Dental Department University of Iowa	70	39	32	31	1
23 University of Maryland, Dental Dept.	58	54	36	34	2
24. University of Michigan, Dental Dept.	67	52	66	64	1
25. University of Pennsylvania, Dental Department	81	72	65	64	3
26. Vanderbilt University, Tenn. . . .	5	44	25	25	
27. Western Dental College, Mo. . . .	42	36	27	26	
28. American College of Dent. Surg., Ill.	128	71	51	44	77

*No report.

UNRECOGNIZED SCHOOLS.	FRESHMEN.	JUNIORS.	SENIORS.	GRADUATES.	POST-GRADUATES.
University of Denver, Dental Department	9	4	3	3	
University of Buffalo, Dental Department	38	32	6	6	
Cincinnati College of Dental Surgery . .	5	3	5	5	
Atlanta Dental College	61	31	6	26	8
Howard University, Dental Department .	6	6	5		
Dental Department Homœopathic Hospital College	12	7	4	4	
. . . .	9	15	4	4	
Western Reserve University, Dental Department					
Cincinnati College of Medicine and Surgery, Dental Department					
Detroit College of Medicine, Department of Dentistry	16	21	1	1	
University College of Medicine, Department of Dentistry, Richmond, Va.*					
The New York Dental School					
Birmingham Dental College, Alabama . .	17	7	3	3	
Marion Sims College of Medicine, Dental Department, St. Louis, (first session, September 11, 1894)					
Dental Dept., Tennessee Medical College*					
United States Dental College, Chicago* .					

*No report.

On motion of Dr. Meeker, the following was adopted :

Resolved, That any State Board not represented by delegates at three successive meetings of this body should forfeit its membership.

On motion of Dr. Louis Jack, the following was adopted :

Resolved, That this body require the Board of Examiners in each State to become informed of the character of any school which may have been organized within its jurisdiction, and to have especial care in its scrutiny of any college which may have applied for admission to the National Association of Dental Faculties.

The following were elected officers for the ensuing year :

L. Ashley Faught, president ; J. T. Abbott, vice-president ; Chas. A. Meeker, secretary and treasurer.

After which the association adjourned to meet at the time and place appointed for the next annual meeting of the American Dental Association, this body to convene at 10 A. M. on the day preceding the date set for the meeting of the American Dental Association.

THE DANGERS OF ANÆSTHESIA IN DIABETICS.

Attention has been frequently called to the risks of surgical measures, even of trivial character, in cases of diabetes, and espeially to the tendency of wounds to assume a gangrenous character. From some observations published by Dr. Becker (*Deut. Med. Wochenschr.*), it would appear, however, that independent of the operative procedure, the anæsthetic might exert an injurious influence upon the disease. He reports three cases in which, some time after the operation, diabetic coma developed, which was rapidly followed by death of the patient, and has been able to find records of nine analogous cases in the literature. It is noteworthy that in most of these instances the patients presented no unusual symptoms for several hours after the operation, and even expressed themselves as feeling perfectly comfortable. At the end of twenty-four to forty-eight hours, however, this condition of comfort gave way to apathy and stupor; dyspnœa and complete unconsciousness then supervened, with involuntary evacuations of urine and feces, and death occurred under symptoms of pulmonary œdema and cardiac paralysis. The urine usually contained a large quantity of sugar (six to seven per cent.) but the results of the autopsy were of little significance in explaining the cause of death. It would seem, on first sight, that the coma was primarily dependent upon the operative procedure, since it has been shown by Frerich and others that marked psychical excitement, bodily exertion, and the irritation of surgical traumatisms are capable of giving rise to this condition. Becker believes, however, that the coma may be produced in a chemical manner by the anæsthetic. His investigations have shown that acetone appears in the urine after anæsthesia in about one-half of the cases of healthy persons, while acetic acid occurs less frequently. According to other observers, prolonged anæsthesia with chloroform may be followed by marked albuminuria and increased acidity of the urine of several days' duration. It will not herefore be surprising that the use of anæsthetics, which in healthy persons is capable of producing decided disturbances of the metabolism, as evidenced by the appearance of acetone and albumin in the urine, should exert so injurious and fatal an influence upon the already impaired nutrition of the diabetic patient. The practical lesson to be derived from these observations is the avoidance, as far as possible, of anæsthetics in this class of cases. It must be especially emphasized that in none of the cases recorded were signs of general sepsis and commencing coma noted before the operation, and that for a short period after its performance, the condition of the patients appeared more than satisfactory.—*International Journal of Surgery.*

A FUNDAMENTAL RULE,—"NO BRUSH, NO EAT."

Dr. McCoy read a brief paper, entitled "How to induce Our Children to Cleanse their Teeth." The plan, he said, had been suggested to him by Dr. G. R. Thomas, of Pasadena. The first thing is to supply the children with the necessary appurtenances,—a brush, medium in size and stiffness, a pleasantly-flavored tooth-powder in a wide-mouthed bottle, so that the brush can be dipped into it, a safe and convenient place to keep them, and last but not least, plenty of water, the free use of which he encourages. The child is taught the use of the brush as soon as the temporary teeth erupt, and if the parent is faithful the child will take the care of its teeth into its own hands at four years. To induce his boys to clean their teeth regularly, he offers a reward of one cent for each time, and requires them to clean the teeth three times a day : first, when hands and face are washed on rising in the morning, then after the noon meal, and before retiring, with an additional ten cents at the end of each month if faithful ; if neglectful, they forfeit one cent for each time. A sheet of paper is tacked up on the wall divided into thirty spaees, with pencil hanging conveniently, so that the boys can mark each time they clean their teeth. The account is balanced carefully at the end of the month, paid promptly, and the boys do what they please with the money. Dr. McCoy said his experience with this plan had been most encouraging.

Dr. Lewis, Oakland, had a different method, which is quite as positive and successful as Dr. McCoy's. He lays down the rule that no child shall come to the breakfast table until its teeth are cleaned, and that rule is like the laws of the Medes and Persians. He has found by impressing on the children the necessity of keeping their teeth clean, that when they are grown it has become such a habit that they do not care to do without clean teeth. The habit can be taught to a very young child.

Dr. Chance : We can be great in little as well as in great things that make up our daily lives. His way of teaching children the need of clean teeth is like Dr. Lewis's. He does not believe in paying people to do right; it is to much like betting on the result. Brushing the teeth means a great deal to dentists. We want to save the teeth of the babies of the poor as well as of the rich; to put in just as good fillings for them when needed. If, when a child is in your chair, you will clean its teeth carefully and then show it how pretty they look, it will help to make that child want its teeth kept clean. A good many tooth scrubbers don't clean the teeth, and a great deal of attrition is caused by improper brushing. In many cases, you can tell whether a person is right-or-left-handed by examining the marks left by brushing the teeth. [Dr. Chance here demonstrated the proper method, in his opinion, to brush the teeth,—that is, the upper teeth downward from gum-margin to incising or grinding surface, the lowers in the opposite way.] He would brush before breakfast, because the mouth doesn't taste well without it, but he would also teach the children to brush after breakfast, dinner, and supper, and before going to bed.—*Cosmos.*

WHAT KILLS THE PATIENT—PERITONITIS OR INFECTION?

In conversation with a gynecologist the other day, he remarked that his patient died on the fifth day from peritonitis. A curious view prevails among physicians that peritonitis causes death; that if peritonitis can only be avoided the patient is safe. The dread of many a physician is peritonitis; as if the patient hung on a thread and peritonitis would snap it ruthlessly asunder. A few careful autopsies on patients who have died from peritonitis would soon dispel this illusion. One sees bands, adhesions and barriers of exudate here and there. Partitions and departments have been formed in the abdominal cavity. Pools of pus have been coralled and circumscribed. Viscid, jelly-like substances surround ill-appearing localities. The most angry complaining viscera have become the most imbedded and fixed. Yet the physician says the patient died of peritonitis. What a grand mistake. The peritonitis made wonderful efforts to save the patient's life, or had it not been for the peritonitis the patient would have long before passed to the tents on the greensward whose curtains never swing backward.

An example will suffice to illustrate that peritonitis attempts to save life instead of destroy it:

Mrs. A. came to the hospital with hernia strangulated for three days. Pulse 110, and shortly after the operation temperature 103.

The operation removed a gangrenous gut strangulated by Poupart's and Gimbernat's ligaments. The gut was reduced so far as Poupart's ligament was concerned, but the strangulation was not relieved, for a second constriction tightly embraced the gut-loop from the chronic inflammation, which had existed for three years previous. Abdominal section was made and the loop in intestine forcibly pulled out from the inside of the peritoneal sac. Six inches of the blackened bowel resected and a Murphy's button inserted. The peritoneal redness, the vascular congestion, the deranged pulse and temperature, showed that she had peritonitis. The lower half of the peritoneum presented the suffused tint of a setting sun. The patient quickly rallied. The temperature became normal, the pulse became 80 and she was hungry. All was going well until about the seventieth hour, when a sudden disturbance arose and she became pale. The temperature fell to 98, the pulse flew up to 140. She became restless. Tympanitis rapidly arose and she died about ninety hours after the operation. The autopsy revealed a perforation at the side of the button on the distal side of the mesentery.

The autopsy. performed by Dr. Brown, of the Post-Graduate School, revealed only a few square inches of what one would call peritonitis, but several square inches of dull, dark peritoneum around the seat of perforation. No adhesions were formed. What killed this patient—peritonitis or infection ? It is easy to answer that infection was the head and front in the cause of death. If peritonitis could have arisen, the woman's life might have been saved by barriers of exudate. Inflammation is the mode that the peritoneum takes to preserve life. Peritonitis is the standing army against the invasion of infection, and the omentum is like a man-of-war, ready at a moment's notice to go to the points of peritoneal infection to capture the invader. Observe, for a moment, the three regions of the peritoneum where infection invades—namely, between the colon and diaphragm, around the appendix and in the pelvis,—and note how adhesions promptly check invasions.

Few autopsies are done without peritonitic adhesions being found in the pelvis around the cecum or in the region of the gall-ducts. In such cases, life was absolutely saved by inflammation, by peritonitis throwing out barriers of exudates,—advance guards against foreign invasion of merciless soldiers, whose sole purpose is destruction and death. Now, turn attention to the small intestines, around which are found but few exudates or adhesions, for the simple reason that death occurs before peritonitis can form barriers to stop death on its way, which is simply infection (the colon bacillus). If the peritoneum on the small intestines had time to inflame, it would throw out exudates to surround and capture the invader. Peritonitis would save life by starving out the infectious invader by coralling him in a limited space, *e. g.*, a pool of pus, whence sterility of the pathogenic microbe arises. Modern research asserts that microbes are the cause of peritonitis, but the adhesions, bands and exudates show how hard the peritoneum tries to stop the advances of such enemies of mankind. If it were not for peritonitis death would soon end the scene. But, while blood corpuscles swarm to the seat of invasion and quickly attempt to surround the infectious invader by burying him with the dead of the battle, infection is only conquered by being buried in the *debris* of its own devastation. As a proof that peritonitis saves life, observe that the most favorable cases of abdominal section are those where collections of pus are circumscribed. The infection has been checked by peritonitis, *e. g.*, in the pelvis, around the cecum, or gall-bladder. The circumscribed invader has been starved out by cutting off supplies of food or space. Hence, infection is the dreaded foe, while peritonitis is the savior of life.

Peritonitis builds solid forts around the ends of the Fallopian tubes, the appendix and the gall-bladder, which alone insure liberty of life to the viscera. We are just beginning to interpret the wonderful workings of the peritoneum. I was once infected in my finger, and my whole arm readily served as a test-tube of culture medium in a few hours. There was no peritoneum to protest by inflaming against the invader, and I was soon delirious. Finally, the white-blood corpuscles arose in sufficient numbers to overcome the intruders and starve them out. It required some six weeks to route the infectious invader. A peritoneum would have likely coralled the infection by an exudate in a few days. Peritonitis tends to save life. Infection tends to destroy it.—ROBINSON (B.), *Buffalo Medical and Surgical Journal.*

TEA AGAIN.

The influence of tea drinking upon the human organism, and especially its relations to insanity, is being investigated by the Commissioners appointed for this purpose in Ireland. The increase of insanity in that Island suggested a relationship between it and the excessive consumption of tea. The Irish peasantry make a strong decoction of tea which is allowed to steep all day ; and this with bread constitutes the three daily meals. The excess of tea causes a general debility of the nervous system and leads to a form of dyspepsia. The nervous unrest, accompanied by insomania, frequently terminates in a permanent mental disorder. To tea drinking is also ascribed dental carries which is on the increase among the peasant and laboring classes. Hot solutions of tannin, accompanied by bread, cover the teeth and furnish a fertile culture medium for the various microbes.—*Pacific Medical Journal.*

PLIERS FOR LIQUIDS.

Dr. Randell Barrett, of Norfolk, Va., notes the readiness with which a little liquid, as alcohol, for instance, may be caught between the beaks of a pair of plugging pliers, carried to a tooth-surface or cavity, and by simply opening the plier-beaks be deposited as a single drop. He suggests the greater facility with a larger volume of liquid can be included within suitably half-hollowed or semicylindered beaks. The Jamison Pliers will serve to demonstrate the suggestion, and it is somewhat surprising to observe the up-hill flow of the liquid as the pliers are opened, for example, upon the cornal surface of an upper molar.—*Cosmos.*

PYORRHEA ALVEOLARIS.

The arguments in favor of pyorrhea alveolaris being of constitutional origin are what?

1st. That it is found in some persons afflicted with gouty diathesis.

2nd. That traces of uric salts are found in the calculi of some of the people afflicted with the gouty diathesis.

3rd. That the condition of irritation in the gums and around the roots, and the discharge of pus, are modified by constitutional treatment.

In oppositlon to this we find : 1st. That pyorrhea is found in persons having no constitutional cachexia or diathesis.

2nd. That if it were of constitutional origin, it would be found in all, or at least in nearly all cases having the gouty disposition.

3rd. That the amelioration of the irritation by constitutional treatment is what would occur in any local irritation when the system would be placed in a healthy condition.

4th. That if it were of gouty diathesis, the deposits from the saliva would also be impregnated with these urates.

5th. That if it were of constitutional origin, constitutional treatment would be necessary for its cure ; but, iustead, local treatment is found sufficient for its complete eradication, notwithstanding the constitutional ailment is continued in undiminished force.

6th. In all cases of pyorrhea alveolaris we find a connection between the calculus and the cavity of the mouth, which would not necessarily be so if it were the result of a constitutional, pathological state.

Besides these points Dr. F. T. Van Woert asserts that the disease is communicable by infected instruments—which, if true, would prove a very strong argument against the theory of constitutional development.—YOUNGER (W. J.), *Paeific Medical Journal.*

BUFFALO CHIPS.

Indians burn 'em.

"Buffalo" is the best advertised school in the country, thanks to its "friends," you know.

The freshmen class numbered eighty a few days ago, with several belated ones yet to be heard from.

An annex to the present building has been fitted up for the use of the freshmen exclusively.

Dentistry and pharmacy are both crying for more room, and yet this is but their third year in the new building.

The present annex suggests the necessity in the near future of a permanent structure for the accommodation of the *whole* dental outfit.

Special attention is called to two articles in this issue, one from the Buffalo *Courier*, the other from advance sheets of the *Practitioner and Advertiser.*

Copies of the Buffalo *Courier* of August 16th, may be had on application to almost any dentist in Buffalo, not excepting those identified with the college itself. "Official" copies are beautifully penciled in blue so that even "he who runs may read."

Profs. Howard and Southwick will fill their old places as usual. Revocation, which was done not only with their consent but by their urgent request, will make no difference in the quantity or quality of their teaching, except perhaps to intensify it.

Prof. Abbott stated the conditions on which he would admit the Buffalo school to membership in the Association of Faculties, and these conditions having been complied with the school at once became a member of this august body.

The following from the Executive Committee was laid on the table: "Resolved, That we regard it as inconsistant for any member of a faculty of any college holding membership in this body at the same time be a member of any state board of dental examiners." How one does have to strain his eyes to see things that are not there!

The old underware fished from the Hamburg two or three years since, and said by some to have once belonged to the Buffalo school, was finally identified as all that remained on earth of Petty Spite and her devoted lover Personal Pique. Said 'ware has travelled. It was exposed at Albany twice, at Niagara Falls once, Chicago once, and lastly at Old Point Comfort. An attempt was made to air it at a joint meeting of the New Jersey and Pennsylvania Societies, but the forewarned executive commitee forbid the removal of the cover. The duds have not been buried by any means,—just laid away for possible future use.

The following is worth emphasizing: "The report of the Executive Committee, recommending the admission of the University of Buffalo, Dental Department, to membership, was amended by the addition of the following clause, and then adopted: 'When the honorary degrees conferred on Messrs. Southwick and Howard are returned to the University and revoked, and official notification of such revocation filed with the secretary of the association.' * * * The Dental Department of the University of Buffalo complied with these conditions on August 13, 1894, and is therefore admitted to full membership. — LOUIS OTTOFY, *Secretary*." The Executive Committee, presumably that appointed in '93, consisted of Prof. Taft, Prof. Hunt, Prof. Abbott.

NOTES.

Beware of the majority of post graduate colleges. Their name is fake.

Dentists should not forget that peroxide of hydrogen is not always peroxide of hydrogen, but Marchand's is.

For a "quick meal" use Horlick's *Malted Milk*. Dentists are sometimes so fixed that luncheon is out of the question, and just here the article in question comes in to fill the aching void.

Drs. I. B. and W. S. Davenport, Paris, announce by card the extention of their practice with Dr. K. A. Davenport in charge at Wimpole Street, Cavendish Sq., W., London.

When a dentist gets away from his fellows and into the meetings of his medical brethren, he talks very like Young-man-ashamed-of-his-vocation. Whereat even those he would cultivate marvel.

At last the term "fang," so long and rediculously used in the sense of *root*, is out. When a first-class book like Kirkes' *Physiology* discards it the doom of the word is sealed. In this work a tooth is described as "posse sing a crown, neck, and *root* or *roots.*"

Dr. Hofheinz, of Rochester, is home from a vacation of a year and a half in Europe. He brings with him the results of his bacteriological work abroad, and is booked for the Buffalo school sometime during the winter.

An emotional writer is fitly characterized thus: "His style has vitality, vigor, picturesqueness—everything but clearness of thought. The trouble is that he did too much of his thinking in the cardiac plexus."

According to Dr. Black, the term *Pyorrhoea alveolaris* was introduced to dentistry by the late Dr. Rehwinkle, at Chicago, in '77. Dr. R. was also, we believe, the author of term *mummificatiòn*, as applied to the pulp in the dried and withered state in which it was not infrequently found after it had been capped with oxychloride of zinc.

Bourget does not write in the vivacious of hit-or-miss style of Max O'Rell. One should take America seriously and go to the bottom of things, Bourget believes. Not content with telling of the "fine animalism" of the American woman, he discusses the shinning whiteness of her teeth, and notes that the gold fillings are set so artistically that the "infirmity" is forgotten!—*Post Express.*

In a little discription of separate cups at the communion, a contributor to the *New York Sun* formulates three rules that in his opinion, might be observed with propriety. There is something in them "for us," which makes their adoption desireable if not imperative: "1. Men with moustaches should have them trimmed before going to the Lord's table. 2. Men and women, before they go to the house of God, should make a diligent use of the tooth brush. 3. All those who have decayed teeth should go to the dentist."

Dr. Black recognizes three forms of pyorrhoea alveolaris: 1st. Salivary-calcic, pericementitis, or inflammation of the peridental membrane induced and continued by deposits of salivary calculus. 2d. Serumal-calcic pericementitis or peridental inflammation induced and kept up by deposits of calcific matter more or less directly from the contiguous vessels; and 3d. Phagadenic pericementitis, or inflammation of the peridental membrane independent of, though usually accompanied by deposits either salivary or serumal, and pre-eminently destructive. These all belong to the group characterized by the term *Pyorrhoea alveolaris*, the fundamental idea of which is flow of pus from the alveolis.

SOCIETIES.

The Vth, VIth, VIIth, and VIIIth Societies will meet at "The Genesee," Buffalo, October 30th and 31st. The programme is a good one and should give every man in attendance an opportunity to contribute something to the common fund of dental information. A large display of goods is promised. Clinics and banquets are tabooed.

Beginning October 7th, the Rochester Dental Society enters upon its year's work, and with the programme even to detail fully made out. At least three members are responsible for the receipts of each meeting, the host, or member who provides the place and luncheon; the essayist, who already knows just what is expected of him; and finally the leader in the presentation and discussion of incidents. The programme is comprehensive and ought to enable the society to make substantial additions to dental theory and practice.

The nineteenth annual meeting of the American Dental Society of Europe was held at Geneva, August 6-8. The following officers were elected: President, Dr. Jenkins Zurich; Vice-President, Dr. Mitchell, London; Treasurer, Dr. Monk, Wiesbaden; Secretary, Dr. Davenport (W. S.), Paris. Executive Committee, Dr. Jenkins, Dr. Daboll, Dr. Hugenschmidt, Paris. Membership Committee, Dr. Mitchell, Dr. Bryan of Basel, Dr. Royce, of Tunbridge Wells. The next meeting will be held at Boulogne, the first Monday in August, 1895.

BOOKS.

Notices of recent publications must go over till January. Vacations occasionly cover not only too much, but also the wrong time

Author H.R.Abbott
Mem.Lib.

Title The Odontographic Journal, Vol. 14-15, 1894.
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